ORDER NO.DSD0507056CE

Service Manual

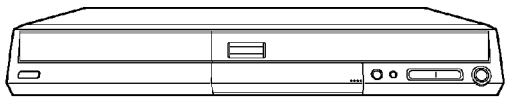
DVD Video Recorder

DMR-EH60EG

Vol.1

Colour

(S).....Silver Type



Notes: This model's DVD Drive is VXY1872.

When replacing with Digital P.C.B. or HDD, "UNFORMAT" indication is displayed and HDD must be formatted.
After that, programme in the HDD will be lost.
In detail, please refer to each content in this service manual.

SPECIFICATIONS

ıtroduction

is service manual contains technical information which will allow service personnel's to understand
ɪ service this model.
ɜase place orders using the parts list and not the drawing reference numbers.

he circuit is changed or modified, this information will be followed by supplement service manual to be filed
ginal service manual.

This service manual does not contain the following information, because of the impossibility of sevicing at component level.

Schematic Diagram, Block Diagram and P.C.B. layout of Digital P.C.B.
Parts List for individual parts of Digital P.C.B.
Exploded View and Parts List for individual parts of RAM drive.

The following category are recycle module part. Please send them to Central Repair Center.

Digital P.C.B. (VEP79108B)
RAM drive (VXY1872)

ecifications

wer supply	AC220-240 V, 50 Hz
wer consumption	33 W
cording system	DVD video recording format (DVD-RAM), DVD video format (DVD-R), DVD video format (DVD-RW)
tical pick-up	System with 1 lens, 2 integration units (662 nm wavelength for DVDs, 795 nm wavelength for CDs)
cordable discs	DVD-RAM
	・Ver.2.0 Ver.2.1/3x-SPEED DVD-RAM Revision 1.0 ・Ver.2.2/5X-SPEED DVD-RAM Revision 2.0
	DVD-R
	・for General Ver.2.0 ・for General Ver.2.0/4X-SPEED DVD-R Revision 1.0 ・for General Ver.2.x/8X-SPEED DVD-R Revision 3.0
	DVD-RW
	・Ver.1.1 ・Ver.1.1/2x-SPEED DVD-RW Revision 1.0 ・Ver.1.2/4X-SPEED DVD-RW Revision. 2.0
	+R
	・Ver.1.0,Ver.1.1,Ver.1.2
ernal HDD pacity	160GB
ick Start for cording & EPG splay uick Start: ON)	1 Sec. Quick Start for Recording & EPG Display* *From the power on, recording starts in about 1 second after the REC button is pressed. If the GUIDE button is pressed while the unit is off, the Electronic Program Guide (EPG) displays in less than 1 second. (Quick Start Mode)
cording time pprox.)	Max. 8 hours (using 4.7 GB disc) XP: 60 minutes SP: 120 minutes LP: 240 minutes EP: 360 minutes or 480 minutes Max.284 hours with HDD (EP 8H mode)
gion number	Region No.2
scs played	DVD-RAM
	DVD-R
	DVD-RW
	+R
	+RW
	DVD-Video,DVD-Audio,Video CD,CD-Audio (CD-DA) SVCD (Conforming to IEC62107) This unit is not compatible with "Chaoji VCD" available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.
	CD-R/RW (MP3,CD-DA,Video CD, SVCD, JPEG formatted discs)
mpression ethod	MP3
	Format : ISO9660 level1 or 2(except for extended formats), Joliet Compatible compression rate : 32kbps ～ 320kbps Compatible sampling rate : 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz This unit is not compatible with ID3 tags.
	CD (JPEG)
	Format : ISO9660 level1 or 2(except for extended formats), Joliet Compatible pixels : between 34×34 and 6144×4096 pixels Sub sampling 4:2:2 or 4:2:0 This unit is not compatible with MOTION JPEG.
	MP3, CD (JPEG) Common Items
	Maximum number of folders : 99 (one disc) Maximum number of files : 999 (one disc) This unit is compatible with multi-session. This unit is not compatible with packet writing.
deo system	
	PAL : 625 lines, 50 fields

Video Input	Video In: (SECAM/PAL/ NTSC)	AV1/AV2(21pin x 2), AV3/AV4(pin jack x 2) 1.0Vp-p ; 75Ω
	S-Video In: (SECAM/PAL/ NTSC)	AV2(21pin), AV3/AV4(S connect Y:1.0Vp-p ; 75Ω, C:0.3Vp-p ; 75
	RGB In(PAL):	AV2(21pin) 0.7Vp-p ; 75Ω
Video Output	Video Out: (PAL/NTSC)	AV1/AV2(21pin x 2), LINE(pin ja 1.0Vp-p ; 75Ω
	S-Video Out: (PAL/NTSC)	AV1(21pin), S connector x 1 Y:1.0Vp-p ; 75Ω, C:0.3Vp-p ; 75
	RGB Out: (PAL/NTSC)	AV1(21pin), 0.7Vp-p ; 75Ω
	Component video out: (NTSC 480P/480I) (PAL 576P/576I)	Y: 1.0Vp-p ; 75Ω(pin jack) PB: 0.7Vp-p ; 75Ω(pin jack) PR: 0.7Vp-p ; 75Ω(pin jack)
Antenna reception system	CCIR (PAL-BGH) (SECAM-BG)	VHF: CH E2 - CH E12, CH A - CH H2 (For Italy) UHF: CH 21 - CH 69 CATV: CH S01 - CH S05(S1-S3) CH S1 - CH S20(M1-U10 CH S21 - CH S41
	France (SECAM-L,L')	VHF: CH 2 - CH 10 UHF: CH 21 - CH 69 CATV: CH B - CH Q (100.5-299.5MHz), CH S21 - CH S41 (299.5-467.25MHz)
RF Converter Output	Not provided	
DV Input (PAL/NTSC) IEEE 1394 Standard, 4Pin		
SD card slot		
Still Picture (JPEG,TIFF)	SD memory card slot: 1pc	
Compatible Media	SD memory card */Multi Media Card *Includes miniSD™ cards. (A miniSD™ card adapter needs to be inserted.)	
Format	FAT12, FAT16	
Image file format	・JPEG conforming to DCF (Design rule for Camera File system) (sub sampling; 4:2:2 or 4:2:0) ・TIFF (Uncompressed RGB chunky) ・DPOF Compatible	
Number of pixels	34×34 to 6144×4096	
Thawing time	Approx. 7sec (2M pixels)	
Audio system		
Recording system	Dolby Digital 2ch, Linear PCM (XP mode, 2ch)	
Analog Input	AV1/AV2(21pin x 2), AV3/AV4(pin jack x 2) Standard input: 0.5 Vrms Full scale: 2.0 Vrms at 1KHz Input impedance: More than 10KΩ	
Analog Output	AV1/AV2(21pin x 2), LINE(pin jack x 1) Standard output: 0.5 Vrms Full scale: 2.0 Vrms at 1KHz Output impedance: Less than 1.0KΩ	
Number of channels	Recording: 2 channels Playback: 2 channels	
Digital Output	Digital Audio Optical Output Connector (PCM,Dolby Digital,DTS,MPEG)	
Dimensions	Approx. 430 (W) x 63 (H) x 350.5 (D) mm (excluding protrusions)	
Mass	Approx. 4.5kg	
Operating temperature	5°C - 40°C (41 F - 104 F)	
Operating humidity range	10 %-80 % RH (no condensation)	
Clock unit	Quartz-controlled 12-hour digital display	
LASER Specification (Class I LASER Product)		
Wave length	795 nm(CDs), 662 nm(DVDs)	

' system	PAL: 625 lines, 50 fields SECAM: 625 lines, 50 fields (input only) NTSC: 525 lines, 60 fields	Wave length	790 nm(CD3), 662 nm(DVD3)
		Laser power	No hazardous radiation is emitted with the safety protection.
ecording system	MPEG2 (Hybrid VBR)	Power consumption in standby mode	approx. 3.0 W
		Solder	This model use lead free solder (PbF).

Notes : Mass and dimensions are approximate.
Specifications are subject to change without notice.

Panasonic

1. Safety precautions

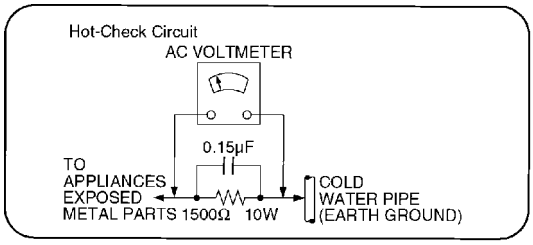
1.1. General guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ. / When the exposed metal does not have a return path to the chassis, the reading must be ∞.

Figure 1



1.1.2. Leakage current hot check / (See Figure 1 .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and

wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).**

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. Precaution of Laser Diode

CAUTION:

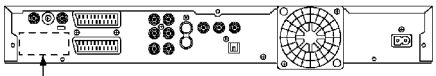
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 662 nm (DVDs) /795 nm (CDs)
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

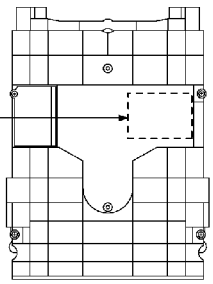
Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Laserinheit abgestrahlt.
Wellenlänge: 662 nm (DVD) /795 nm (CD).
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

CLASS 1
LASER PRODUCT



CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4. Handling the Lead-free Solder

4.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:
P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

5. Each Button

6. New Feature

6.1. Quick start function(REC)

1. General

A few seconds after tuning on the unit,you can start recording to DVD-RAM,HDD.

You can switch the operation of this function (ON/OFF) on the menu screen. .

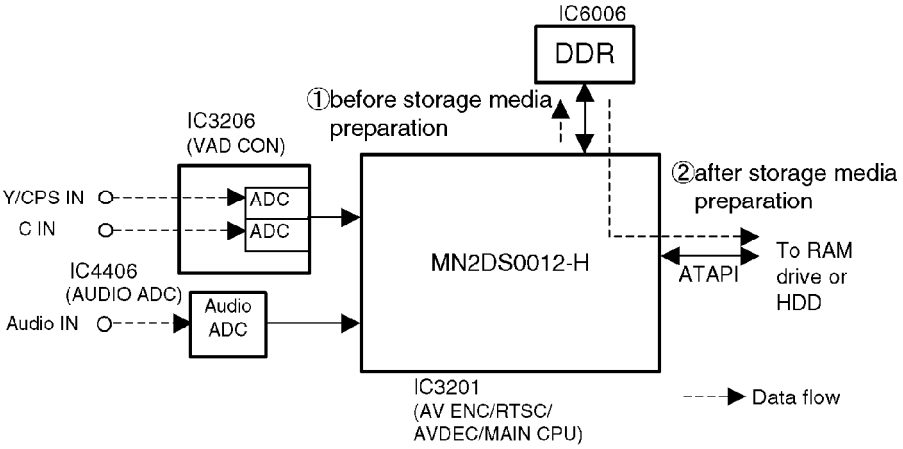
2. Quick start(REC) principle

In the power-off at Quick start, only power supplies for video IC,tuner and storage media are cut off.

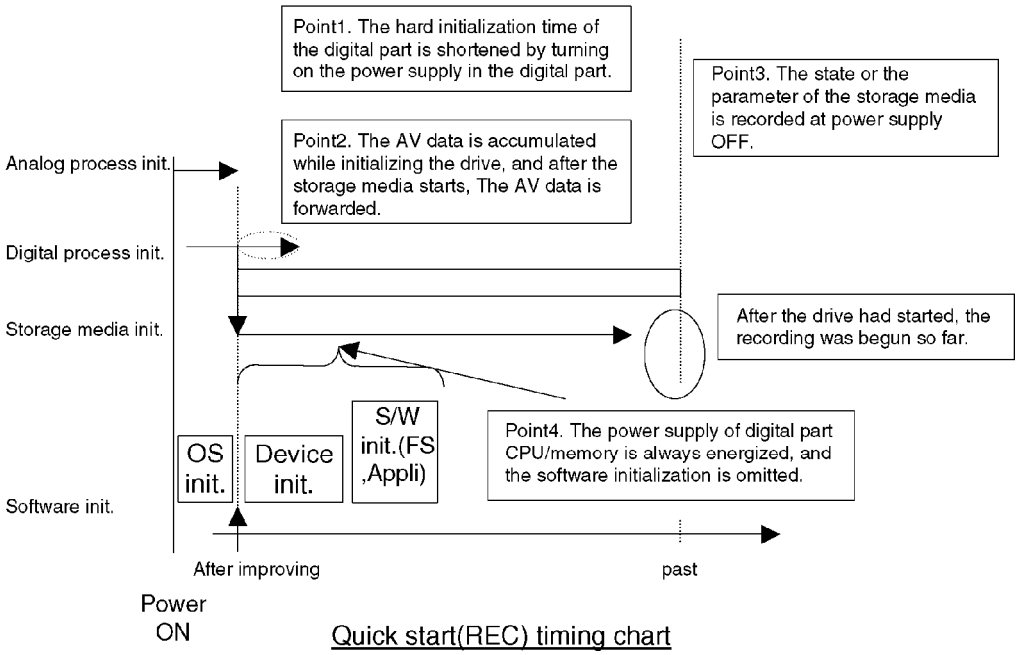
① When the REC button is pushed a few second after the power button is pushed, Audio and Video data are stored in DDR SDRAM before a storage media(DVD-RAM or HDD) preparation.

***Preparation time → DVD-RAM: Fabout 8seconds**
HDD: about 18seconds

② After a storage media(DVD-RAM or HDD) preparation,Audio and Video data are transfer from DDR SDRAM to the storage media.



Quick start(REC) explanation chart



Quick start(REC) timing chart

7. Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

7.1. Forcible Disc Eject

7.1.1. When the power can be turned off.

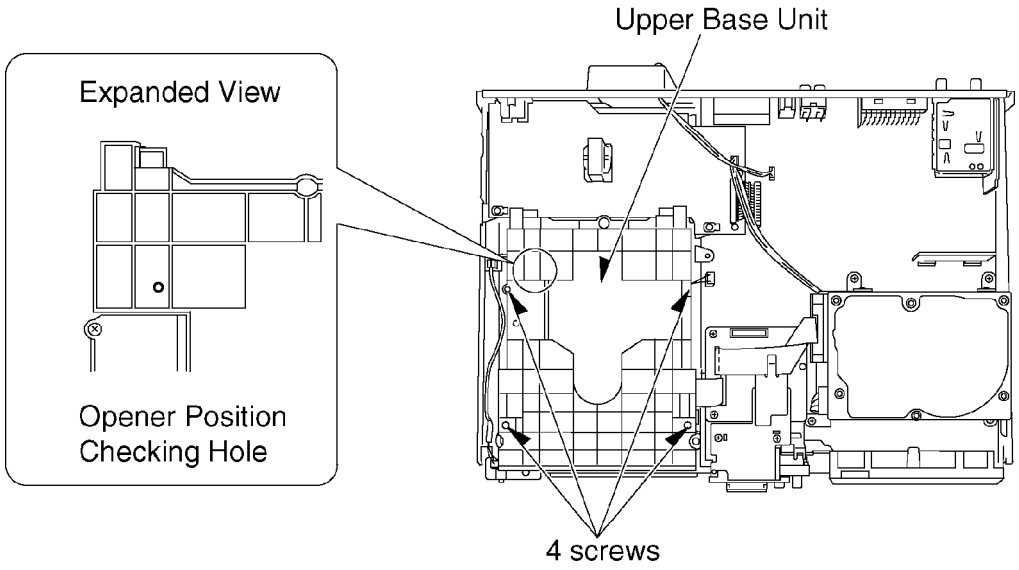
1. Turn off the power and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

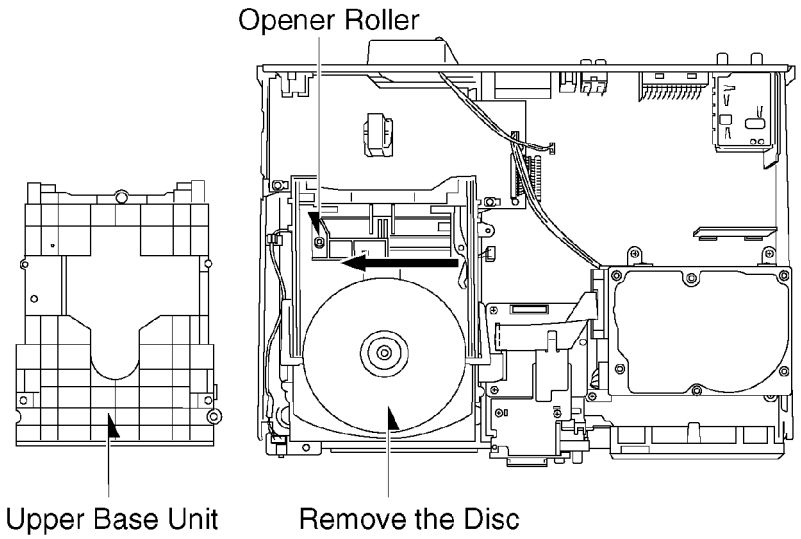
7.1.2. When the power can not be turned off.

1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.2. When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Remove the Front Panel.
4. Remove 4 screws and Upper Base Unit from DVD-RAM Drive.
5. Take out the disc and put the Opener Roller on fully position for direction of Arrow.
6. Put the Upper Base Unit so that the Opener Roller is inserted into the groove.
7. Check Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws.





8. Service Explorer

Confirm "RAM-Drive Last Error" in Service Mode

Execute Service Mode

1. Press [REC], [CH UP] and [OPEN/CLOSE] simultaneously for 5 seconds when P-off.
FL Display:

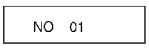
SERVICE MODE

***After finishing display "(7). Factor of Drive Error occurring", press [0] [2] ~[1] [9] keys of the Remote Controller so that 19 memories can be displayed as maximum.**

2. Press [4] [2] keys of remote controller.

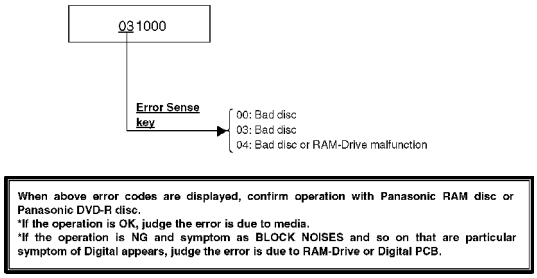
Example of FL Display:

(1) Error Number is displayed for 5 seconds.

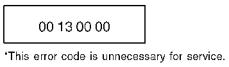


(2) Time when the error has occurred is displayed for 5 seconds.

(3) Last Drive Error (1/2) is displayed for 5 seconds.

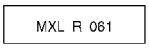


(4) Last Drive Error (2/2) is displayed for 5 seconds.



(5) Error occurring Disc type is displayed for 5 seconds.

(6) Disc Maker's ID is displayed for 5 seconds.



Example of Disc Maker's ID:

DVD-R Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	Japan
2	PVC	Pioneer	Japan
3	MCC	Mitsubishi Chemical Corporation	Japan
4	TDK	TDK	Japan
5	MXL	Maxell	Japan
6	MCI	MITUI CHEMICALS	Japan
7	JVC	Victor JVC	Japan
8	TAIYOYUDEN	Taiyo yuden	Japan
	TYG		
9	GSC	Giga Storage	Taiwan
10	PRODISC	Prodisc	Taiwan
11	PRINCO	PRINCO	Taiwan
12	RITEK	RITEK	Taiwan
13	OPTDISC	OPTDISC	Taiwan
14	LEAD DATA	LEAD DATA	Taiwan

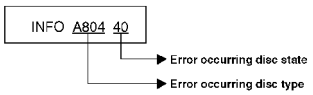
No.	FL Display (Disc Maker's ID)	Disc Maker	Country
15	CMC	CMC	Taiwan
16	AUVISTAR	AUVISTAR	Taiwan
17	ACER	Acer	Taiwan
18	VIVASTAR	VIVASTAR	Switzerland
19	LGE	LG Electronics	Korea

DVD-RAM Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	
2	MATSUSHITA	Panasonic	Japan
3	MXL	Maxell	Japan
4	PRODISC	Prodisc	Taiwan
5	OPTDISC	OPTDISC	Taiwan
6	CMC	CMC	Taiwan

***Since an display is arbitrarily set up by the disk producer side, the above-mentioned display may be changed.**
Please make it reference as an example of a display.

(7) Factor of Drive Error occurring is left displayed



Error Occurring Disc Type

FL Display	Disc Type
00	DVD-ROM/Video
01	Audio-CD
02	2.6GB DVD-RAM
03	4.7GB DVD-RAM
04	DVD-R

Error Occurring Disc State

FL Displays (Hexadecimal)	Description			
	Disc distinction state	Cartridge disc state	Cartridge disc state	Disc size
00	OK	With cartridge	Has not been opened yet.	12 cm
10	OK	With cartridge	Has not been opened yet.	8 cm
20	OK	With cartridge	Has been opened.	12 cm
30	OK	With cartridge	Has been opened.	8 cm
40	OK	Bare	Has not been opened yet.	12 cm
50	OK	Bare	Has not been opened yet.	8 cm
60	OK	Bare	Has been opened.	12 cm
70	OK	Bare	Has been opened.	8 cm
80	NG	With cartridge	Has not been opened yet.	12 cm
90	NG	With cartridge	Has not been opened yet.	8 cm
A0	NG	With cartridge	Has been opened.	12 cm
B0	NG	With cartridge	Has been opened.	8 cm
C0	NG	Bare	Has not been opened yet.	12 cm
D0	NG	Bare	Has not been opened yet.	8 cm
E0	NG	Bare	Has been opened.	12 cm
F0	NG	Bare	Has been opened.	8 cm

9. Self-Diagnosis and Special Mode Setting

9.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by "Self-Diagnosis Display" when any error has occurred.
U, H** and F** are stored in memory and held.**
You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.
Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	REMOTE "*" is remote c code of the ma Display for 5 se
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	U59 "U59 is display minutes.
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99 Displayed is lef [POWER] key is
H19	Inoperative fan motor	When inoperative fan motor is detected after powered on, the power is turned off automatically. The event is saved in memory.	No display	No display

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	“This disc is incompatible.”	UNSUPPO Display for 5 se
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	“Cannot read. Please check the disc.”	NOREAD Display for 5 se
HARD ERR	Drive error	The drive detected a hard error.	“DVD drive error.”	HARD ERF Display for 5 se
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	SELF CHE
Full Program	32 programs are already set.	32 programs are already set.	No display	PROG FULL

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
UNFORMAT	Unformatted disc error	**You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment.** If you will use this disc, format is necessary. But, all program recorded on this disc will be deleted.	Format This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	UNFORMAT
PLEASE WAIT	Unit is in termination process	**Unit is in termination process now.** **"BYE" is displayed and power will be turned off.** **In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.**	No display	PLEASE WA

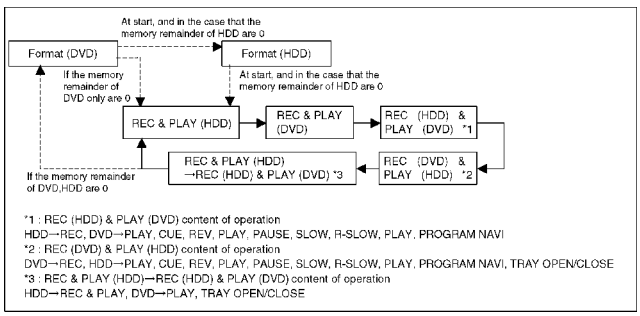
9.2. Special Modes Setting

Item		FL display	Key opera
Mode name	Description		Front K
TEST Mode	*All the main unit's parameters (include tuner) are initialized.	TEST AV1	Press [STOP], [C and [OPEN/CLO simultaneously seconds when p off.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	Open the tray, a [REC] and [PLA simultaneously seconds. NOTE: Drive should be to DVD.
Service Mode	Setting every kind of modes for servicing. *Details are described in "9.3. Service Mode".	SERVICE MODE	When the power press [CH UP], [CLOSE] and [RE simultaneously seconds.

Item		FL display	Key opera
Mode name	Description		Front K
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON or EXT-LINK is ON, execute " Forced disc eject " after releasing Timer REC or EXT-LINK. *This command is not effective during "Child lock" is ON. While Demonstration Lock is being set, this Forced disc eject function is not accepted. If this command was executed while TIMER REC is being set, TIMER REC setting will be kept.	The display before execution leaves. **********	When the power press [STOP] an keys simultaneo seconds.
Child lock/unlock	Set or release “Child Lock”.	X HOLD	Press [ENTER] a [RETURN] by re controller simult until [X-HOLD] is displayed.
NTSC/PAL system select	To switch PAL/NTSC alternately.	The display before execution leaves. **********	While the power mode), press [S [OPEN/CLOSE] simultaneously seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON or EXT-LINK is ON, execute “Forced Power-off” after releasing Timer REC or EXT-LINK.	Display in P-off mode.	Press [Power] k than 10 seconds

Item		FL display	Key opera
Mode name	Description		Front K
Aging	Perform sequence of modes as * Aging Description shown below continually. **Caution:** **All programs in HDD and DVD-RAM disc will be deleted because Formatting is done once in Aging process.**	Display following the then mode.	When the power press [STOP], [F and [OPEN/CLO simultaneously seconds and les seconds. NOTE1: If Unit has not tu Aging mode by shown above, ex TEST MODE onc execute operatic above. (*All the main un parameters inclu are initialized by mode.) NOTE2: If the unit has hu because of pres for over 10 seco turn off the pow execute this cor *When releasing mode, press [PC

Aging Contents (Example):



Item		FL display	Key opera
Mode name	Description		Front K
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. LOCK “LOCK” is displayed for 3 seconds.	When the power press [STOP] an [POWER] keys simultaneously seconds.
		*When unlock the tray. UNLOCK “UNLOCK” is displayed for 3 seconds.	When the power press [STOP] an [POWER] keys simultaneously seconds.
		*When press OPEN/ CLOSE key while the tray being locked. LOCK Display “LOCK” for 3 seconds.	Press [OPEN/CL while the tray be locked.
ATP re-execution	Re-execute ATP.	Display at ATP executing. **********	When the power mode), press [C [CH DOWN] simultaneously seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. **********	When the power mode), press [S [PLAY] simultan 5 seconds.

9.3. Service Modes

Service mode setting: While the power is off, press REC, CH UP and OPEN / CLOSE simultaneously for five seconds.

Item		FL display	Key opera
Mode name	Description		(Remote contr
Release Items	Item of Service Mode executing is cancelled.	SERVICE MODE	Press [0] [0] or [service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in "9.1. Self -Diagnosis Functions".	♣□□ *♣ shows U/H/F. □□ shows number.	Press [0] [1] in s mode
ROM Version Display	Region code, MAIN firm version, TIMER firm version and DRIVE firmware versions are displayed on FL for five seconds per each version in order, but ROM version will be left displayed.	REGION* MAIN ****** TIMER****** DRIVE **** ROM * *** "*" are version displays.	Press [0] [2] in s mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/ Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WHIT I Switch Interlace/ Progressive WHIT P	Press [1] [1] in s mode. Press [1] [4] in V Picture Output n *I/P are switched alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/ Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE I Switch Interlace/ Progressive MAGE P	Press [1] [2] in s mode. Press [1] [4] in M Picture Output n *I/P are switched alternately.

Item		FL display	Key opera
Mode name	Description		(Remote contr
RTSC Return in XP (A & V)	AV1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace/ XP/ Audio 48kHz EE2 I XP 48	Press [1] [3] in s mode.
		Switch Interlace/ Progressive EE2 P XP 48	Press [1] [4] in R Return XP mode *I/P are switched alternately.
		Audio 44.1 kHz/ 48 kHz Switch EE2 P XP 44	Press [2] [4] in R Return XP mode *48 kHz / 44.1 kH switched alterna
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is “Interlace”. *This command is effective during executing “White Picture Output”, “Magenta Picture Output” and “RTSC Return in XP (A & V)” modes.	Initial mode is Interlace SERVICE I Switch Interlace/ Progressive SERVICE P	Press [1] [4] in I/ mode. *I/P are switched alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	TIMER MUTE	Press [2] [1] in s mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	MAIN MUTE	Press [2] [2] in s mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) AUDIO 48	Press [2] [3] in s mode.
		Audio 44.1kHz/48kHz switching AUDIO 44	Press [2] [4] in A Pattern Output r *48 kHz / 44.1 kH switched alterna

Item		FL display	Key opera
Mode name	Description		(Remote contr
HDD READ inspection	Perform a complete read inspection of the HDD.	When the HDD is OK HDD RDOK If the HDD is defective HDD RDNG□○○ □ :Judge of Forward rate. *When normal (Forward rate is 35Mbps or more, and there is no HDD error):□is Space. *When Abnormal (Forward rate is less than 35Mbps or HDD error existing):□is X. ○○ :Number of what have spent time for seeking is over 100ms. *When normal:○○ are spaces. *When Abnormal: Display Number of what have spent time for seeking over 100ms. However, if the number is more than 100, display [XX]. We judge it is normal that the number is less than 4.	Press [3] [1] in t mode. *When cancelin checking mode executing, do "f power-off". Method: Press the "POW button more tha seconds.
Laser Used Time Indiction	Check laser used time (hours) of drive.	LASER***** ● (*****) is the used time display in hour. ● Laser used time of DVD / CD in Playback/ Recording mode is counted.	Press [4] [1] in s mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLR LASER	Press [9] [5] in s mode.

Item		FL display	Key opera
Mode name	Description		(Remote contr
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive. *Details are described in “8. Service Explorer”.	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred is displayed for 5 seconds. YMMDDhhmmss Y: Year MM: Month DD: Day hh: Hour mm: Minute ss: Second 3. Last Drive Error (1/2) is displayed for 5 seconds. ****** 4. Last Drive Error (2/2) is displayed for 5 seconds. ******** 5. Error occurring Disc type is displayed for 5 seconds. MEDIA****** 6. Disc Maker ID is displayed for 5 seconds. ********** 7. Factor of Drive Error occurring is left displayed	Press [4] [2] in s mode. When “INFO**** being displayed error histories c displayed by pre [1] - [1] [9] In case that the cannot be identi display is black

		INFO*******	

Item		FL display	Key opera
Mode name	Description		(Remote contr
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	CLR DRIVE	Press [9] [6] in s mode.
Turn on all FL/ LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in s mode.
PB HIGH Signal Output	8 pin of AV 1 Jack (PB HIGH terminal) is High (approx. 11V DC).	PB8 HIGH	Press [5] [2] in s mode.
PB MIDDLE Signal Output	8 pin of AV 1 Jack (PB HIGH terminal) is Middle (approx. 5.5V DC).	PB8 MIDDLE	Press [5] [3] in s mode.
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	000Γ (1) ** (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in s mode.
Production Date Display	Display the date when the unit was produced.	PD YYYYMMDD YYYY: Year MM: Month DD: Day	Press [6] [1] in s mode.
Display the accumlated working time	Display the accumulated unit's working time.	********** S (Indicating unit: Second)	Press [6] [4] in s mode.

Item		FL display	Key opera
Mode name	Description		(Remote contr
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. FTREC*** Display the time when the error has occurred for 5 seconds.. YYMMDDHHMM YY: Year MM: Month DD: Day HH: Hour MM: Minute Accumulated working time till occuring of the error is left displayed. ********** S (Indicating unit: Second)	Press [6] [5] in s mode. Then press [0] [the past 19 erro are displayed.
Delete the Error History	Delete Error History information stored on the unit.	CLR FTREC	Press [9] [7] in s mode.
SD card WRITE check	Check SD card WRITE function with SD card slot.	When the WRITE check is OK. SDCD OK When the WRITE check is NG. SDCD NG *Note: The image stored in the SD card will be erased.	Insert a SD card card slot, and pr in service mode *Insert SD card power is off. *Check for [CAR display on the F and go on the pr

Item		FL display	Key opera
Mode name	Description		(Remote contr
AV4(V) / AV1(RGB) I/O Setting	Set input to AV4 (V) and set output to AV1 (RGB) for I/O checking	AV4V-AV1RGB	Press [8] [0] in s mode.
AV2(Y/C) / AV1(V) I/O Setting	Set input to AV2 (Y/C) and set output to AV1 (V) for I/O checking	AV2YC-AV1V	Press [8] [1] in s mode.
AV2(V) / AV1(Y/C) I/O Setting	Set input to AV2 (V) and set output to AV1 (Y/C) for I/O checking	AV2V-AV1 YC	Press [8] [2] in s mode.
AV2(RGB) / AV1(V) I/O Setting	Set input to AV2(RGB) and set output to AV1(V) for I/O checking	AV2RGB-AV1V	Press [8] [3] in s mode.
P50(H) Output	Timer Microprocessor IC7501-83 output High signal for AV1-pin 10 passing through inverter (approx. 0V DC at AV1-pin 10).	P50 HIGHOUT When OK. P50 HIGH OK When NG. P50 HIGH NG	Press [8] [4] in s mode.
P50(L) Output	Timer Microprocessor IC7501-83 output Low signal for AV1-pin 10 passing through inverter (approx. 4.4V DC at AV1-pin 10).	P50 LOW OUT When OK. P50 LOW OK When NG. P50 LOW NG	Press [8] [5] in s mode.
Tray OPEN/ CLOSE Test	The RAM drive tray is opened and closed repeatedly.	NO********* "*" is number of open/ close cycle times.	Press [9] [1] in s mode *When releasing mode, press the button of Remot Controller more seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	CLR E-CODE	Press [9] [8] in s mode.

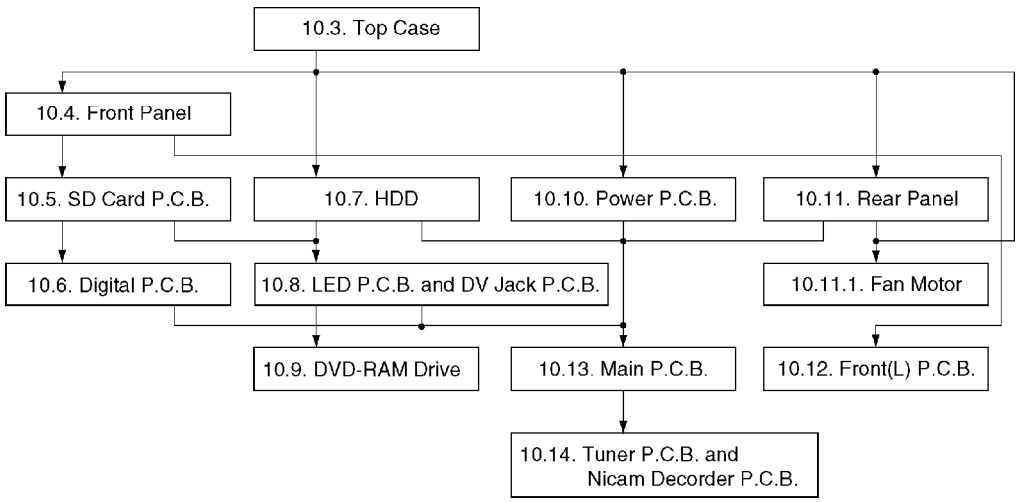
Item		FL display	Key opera
Mode name	Description		(Remote contr
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	CLR SERV	Press [9] [9] in s mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. **********	Press power but front panel or Re controller in ser

10. Assembling and Disassembling

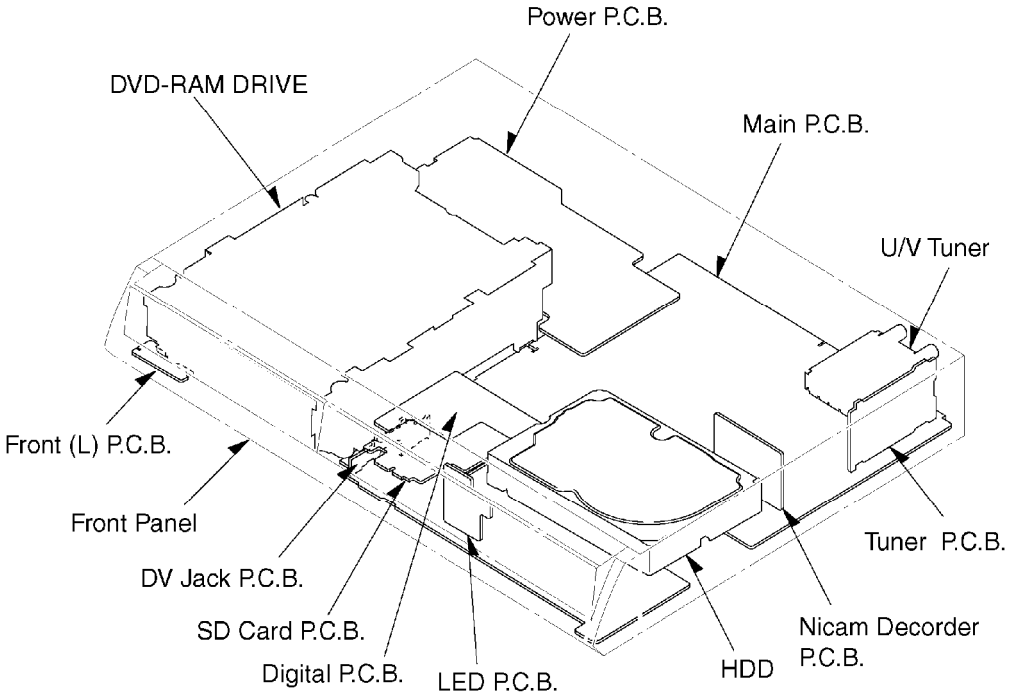
Caution:
Original screws should be used.

10.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart below.

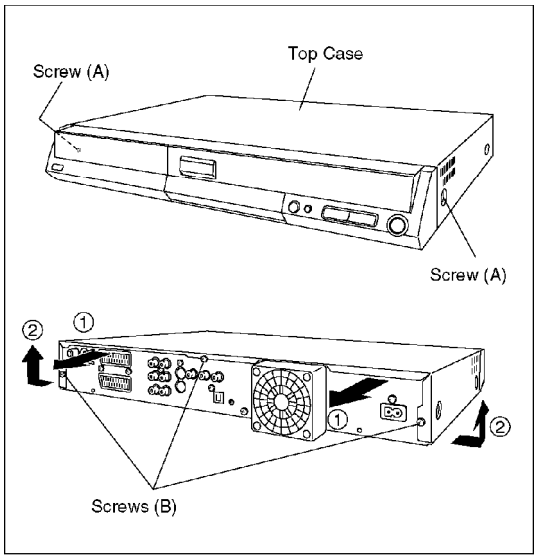


10.2. P.C.B. Positions



10.3. Top Case

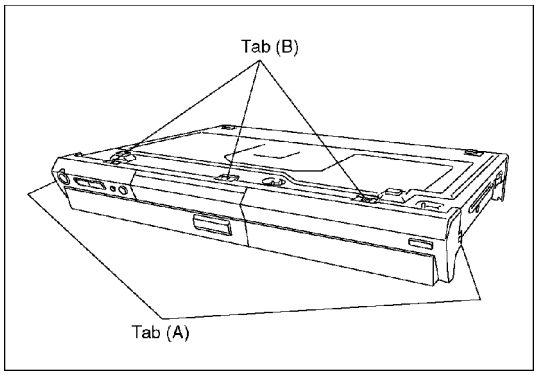
1. Remove the 2 screws (A) and 3 screws (B).
2. Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.



10.4. Front Panel

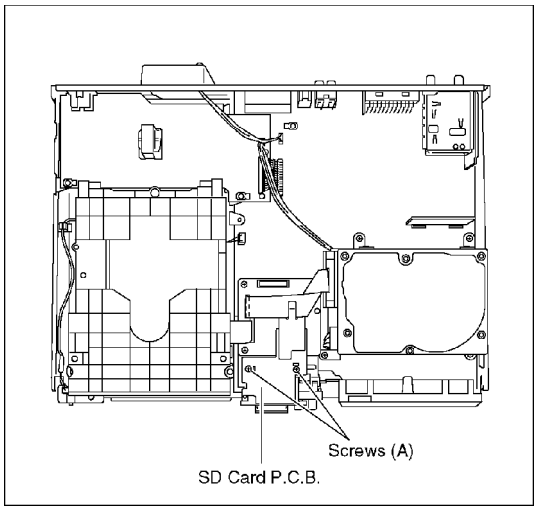
1. Unlock 2 tabs (A) and 3 tabs (B) in this order to remove Front Panel.

(The tab (A) and (B) should be unlocked at the same time, respectively.)



10.5. SD Card P.C.B.

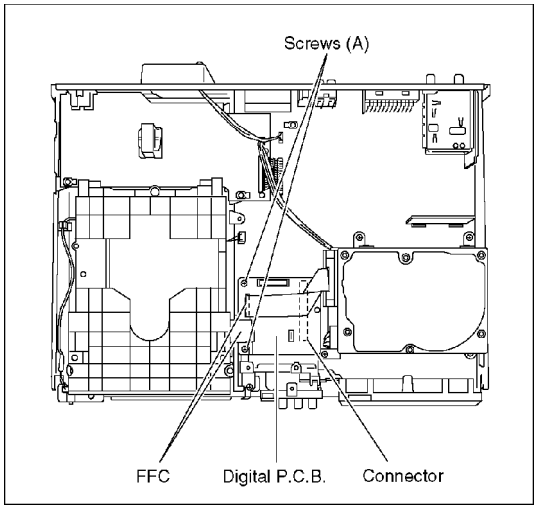
1. Remove 2 Screws (A) to remove SD Card P.C.B.



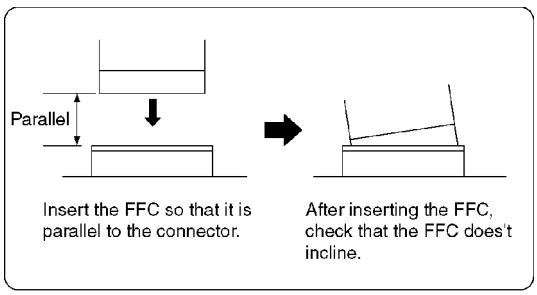
10.6. Digital P.C.B.

1. Remove 2FFCs and 2 Screws (A).

2. Lift up Digital P.C.B. slightly so to disconnect Connector to remove Digital P.C.B.



CAUTION:
When replacing Digital P.C.B., pay attention as below.

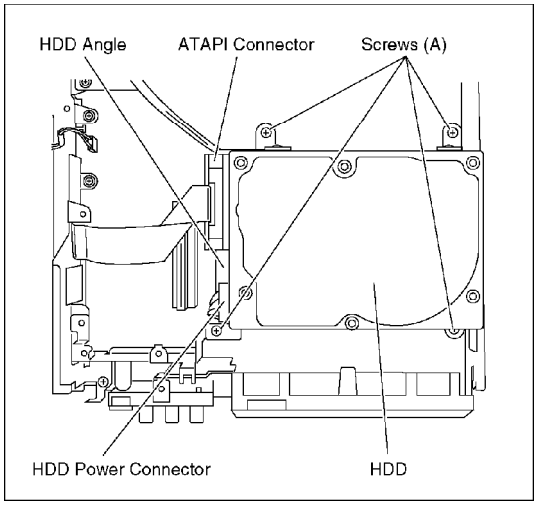


10.7. HDD

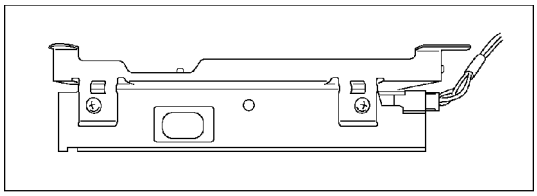
When replacing with Digital P.C.B., "UNFORMAT" indication is displayed and HDD must be formatted.
After that, **programme in the HDD will be lost**.
- How to format the HDD -
1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.
2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

1. Remove ATAPI Connector and HDD Power Connector.

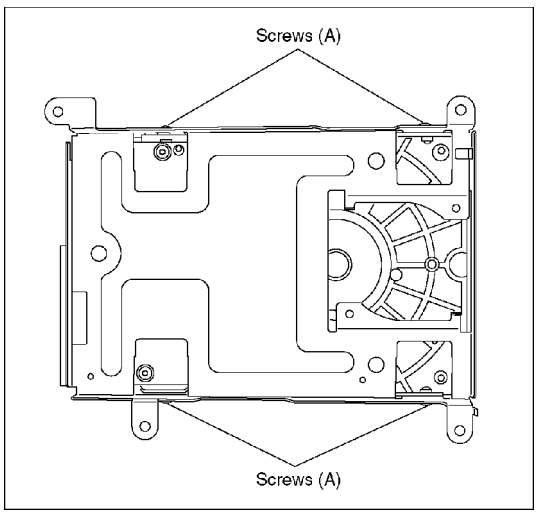
2. Remove 4 Screws (A) to remove HDD Angle with HDD.



3. Put HDD with HDD Angle up and down inversely so as not to give a shock to HDD.

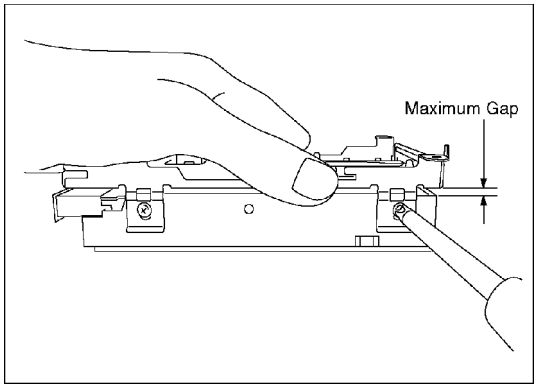


4. Remove 4 screws to remove HDD.



Caution for Attaching HDD

Put HDD up and down inversely so as not to give a shock to HDD, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.



Handling of HDD

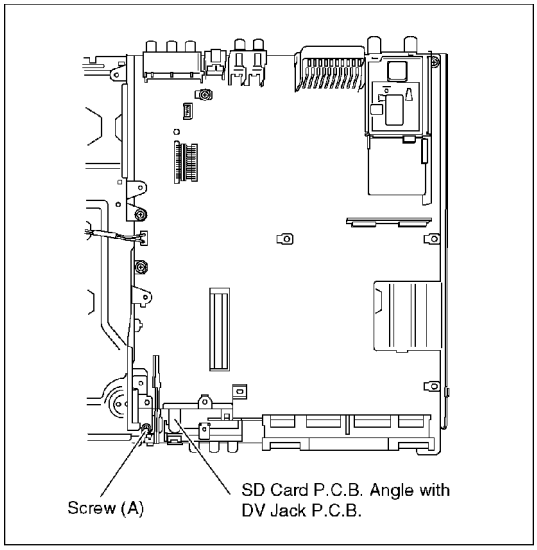
The following precautions should be taken when handling HDD.

1. Never give an impact to HDD. (Even a drop from 1cm height can be a cause of HDD failure.
2. When placing HDD on a workbench, provide a mat on a bench for shock absorption and anti-static purposes.
3. When installing HDD, release it from your hands only after confirming that it is fully set on the chassis.
4. Avoid stacking up HDD.
5. HDD is unstable and easy to fall. Do not stand it on its side face.
6. When handling HDD, hold its side faces to avoid static hazard.
7. Do not place HDD on its wrapping bag after removal. (Prevention of static hazard
8. Use a screwdriver with low impact and anti-static features.

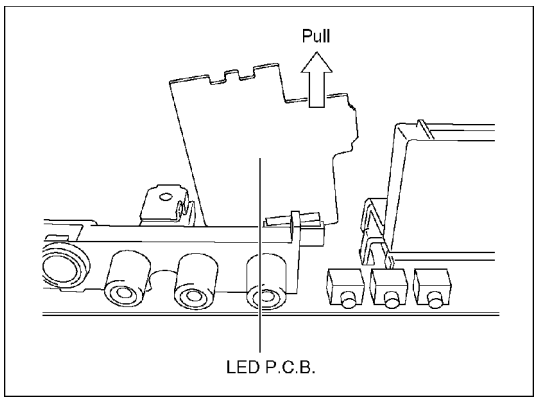
Note:
When replacing HDD, please make the rear jumper slave or cable select configuration.

10.8. LED P.C.B. and DV Jack P.C.B.

1. Remove a Screw (A) to remove SD Card P.C.B. Angle with DV Jack P.C.B..

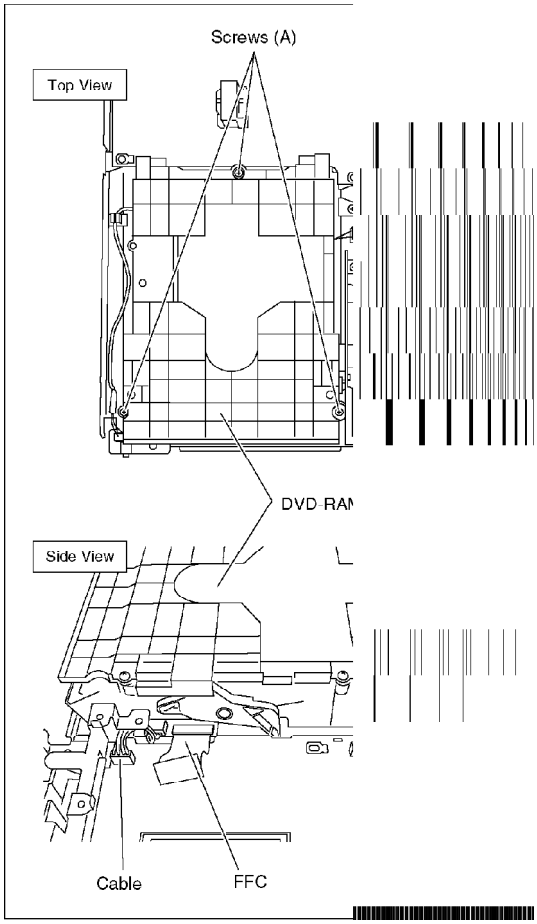


2. At first disconnect the connector on one side as shown below, and pull out LED P.C.B.



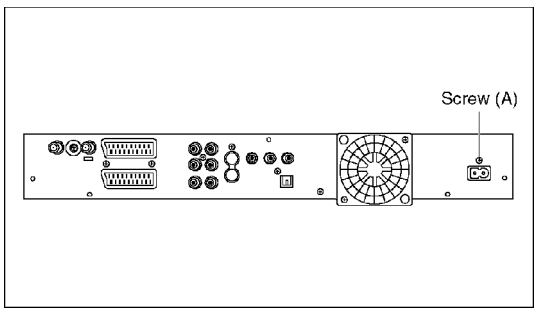
10.9. DVD-RAM Drive

1. Remove 3 Screws (A) to remove DVD-RAM Drive.
2. Lift up DVD-RAM Drive slightly and remove FFC and remove Cable between DVD-RAM Drive and Main P.C.B.



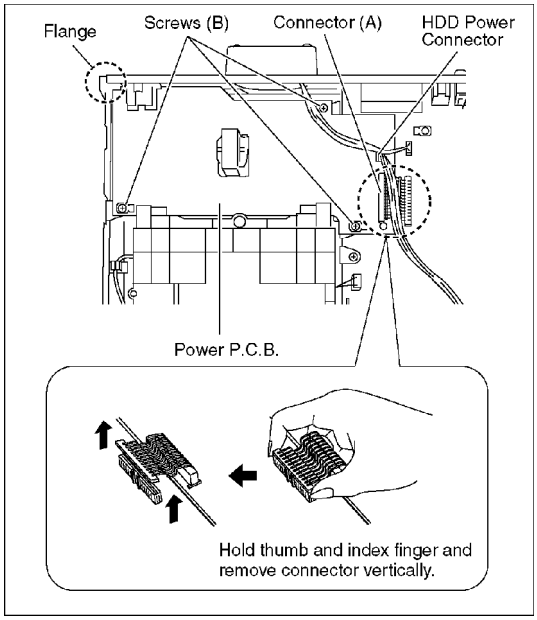
10.10. Power P.C.B.

1. Remove Screw (A).



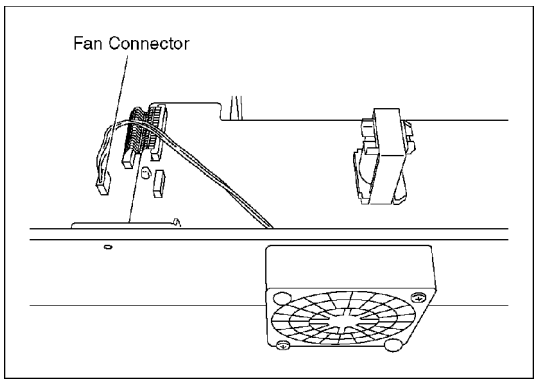
2. Remove 3 Screws (B) and disconnect Connector (A) and HDD Power Connector.

3. Unlock Power P.C.B. from a Flange to remove Power P.C.B.

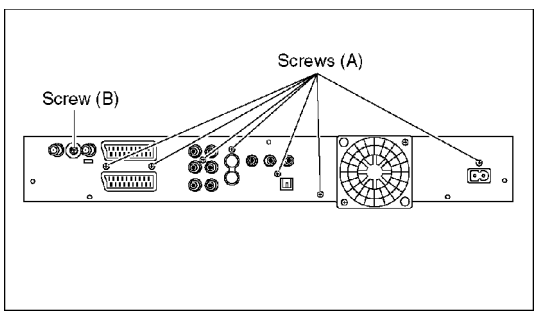


10.11. Rear Panel

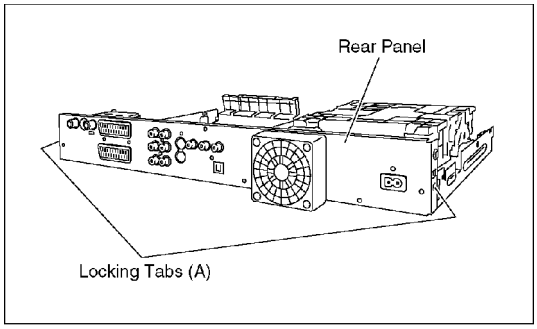
1. Disconnect Fan Connector.



2. Remove 7 Screws (A) and Screw (B).



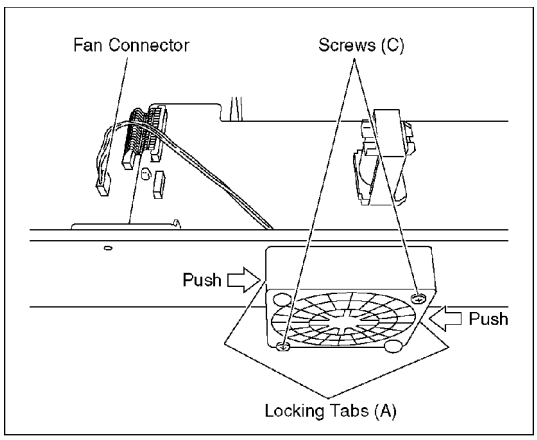
3. Unlock 2 Locking Tabs (A) to remove Rear Panel.



10.11.1. Fan Motor

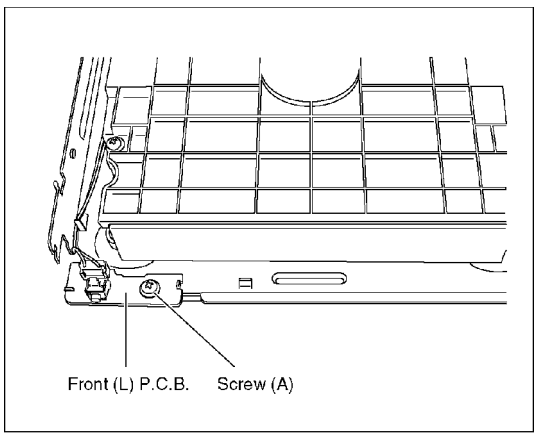
1. Disconnect Fan Connector and remove 2 Screws (C).

2. Push and unlock 2 locking Tabs (A) to remove Fan Motor.



10.12. Front (L) P.C.B.

1. Remove a Screw (A) to remove Front (L) P.C.B.

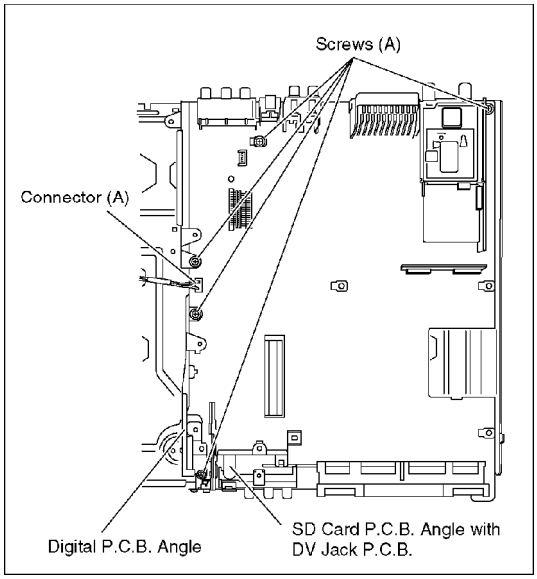


10.13. Main P.C.B.

1. Disconnect Connector (A) for Front (L) P.C.B.

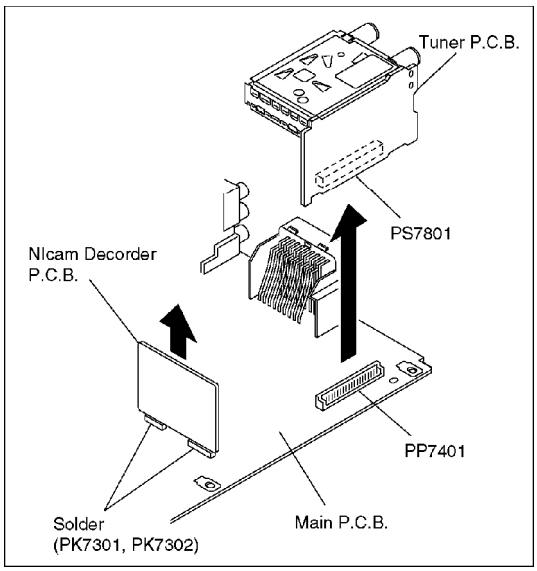
2. Remove 5 Screws (A).

3. Remove Digital P.C.B. Angle and SD Card P.C.B. Angle with DV Jack P.C.B. and disconnect Connector (A) to remove Main P.C.B.



10.14. Tuner P.C.B. and Nicam Decoder P.C.B.

1. Pull out the Tuner P.C.B. in the direction of the arrow.
2. Remove the solders and pull out the Nicam Decoder P.C.B.



11. Service Fixture and Tools

Part Number	Description	Compatibilit
RFKZ0125	Extension FFC (Digital P.C.B. - DVD-RAM Drive / 40 Pin)	Same as E50/ E55 se
RFKZ0126	Extension Cable (MainP.C.B. - DVD-RAM Drive/ 4 Pin)	Same as E30/HS2 se
RFKZ0216	Extension Cable (MainP.C.B. - Power P.C.B. / 23 Pin)	Same as E55 series
RFKZ0260	Extension Cable (MainP.C.B. - Digital P.C.B. / 88 Pin)	Same as EH50 series

12. Service Positions

Note:
For description of the disassembling procedure, see the section 10.

12.1. Checking and Repairing of Power P.C.B.

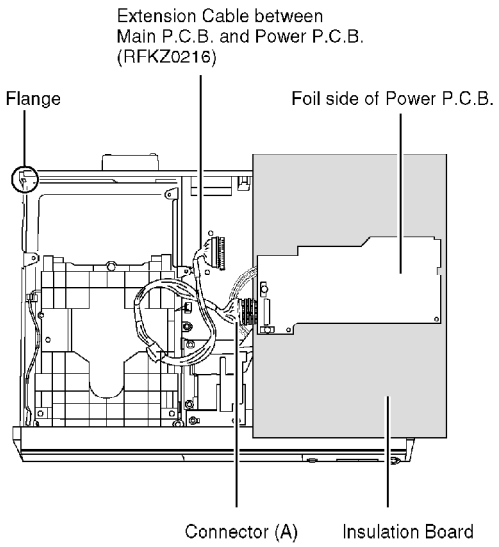
1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Power P.C.B.

- Remove 1 Screw for AC Inlet fixing
- Remove 3 Screws fixing Power P.C.B.
- Remove Connector (A) to Main P.C.B.
- Unlock Power P.C.B. from a Flange to remove Power P.C.B.
- Connect Extension Cable between Main P.C.B. and Power P.C.B. (RFKZ0216).
- Put Power P.C.B. on Insulation Board so that it's foil side faces top.

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



12.2. Checking and Repairing of Digital P.C.B.

1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Front Panel

- Unlock 2 Locking Tabs on side
- Unlock 3 Locking Tabs on bottom
- Remove Front Panel

3. SD Card P.C.B.

- Remove 2 Screws
- Remove SD Card P.C.B.

4. Digital P.C.B.

- Remove FFC from Digital P.C.B. for RAM
- Remove 2 Screws fixing Digital P.C.B.
- Lift up Digital P.C.B. Slightly to remove it

5. HDD

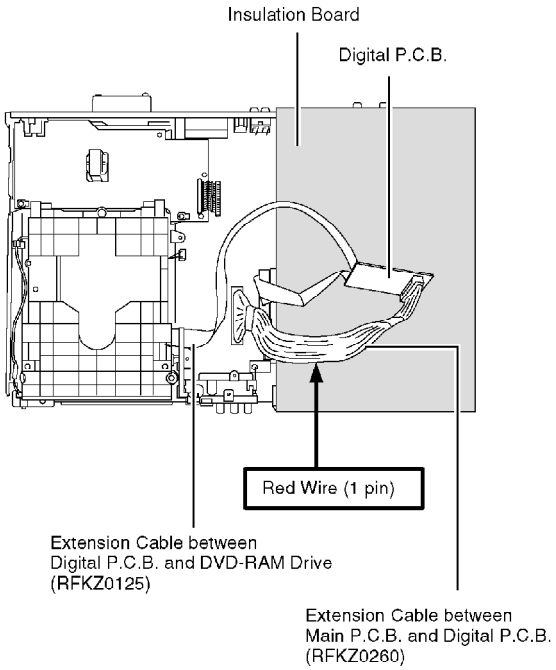
- Remove 4 Screws fixing HDD Angle to remove it with HDD

6. SD Card P.C.B. Angle with DV Jack P.C.B.

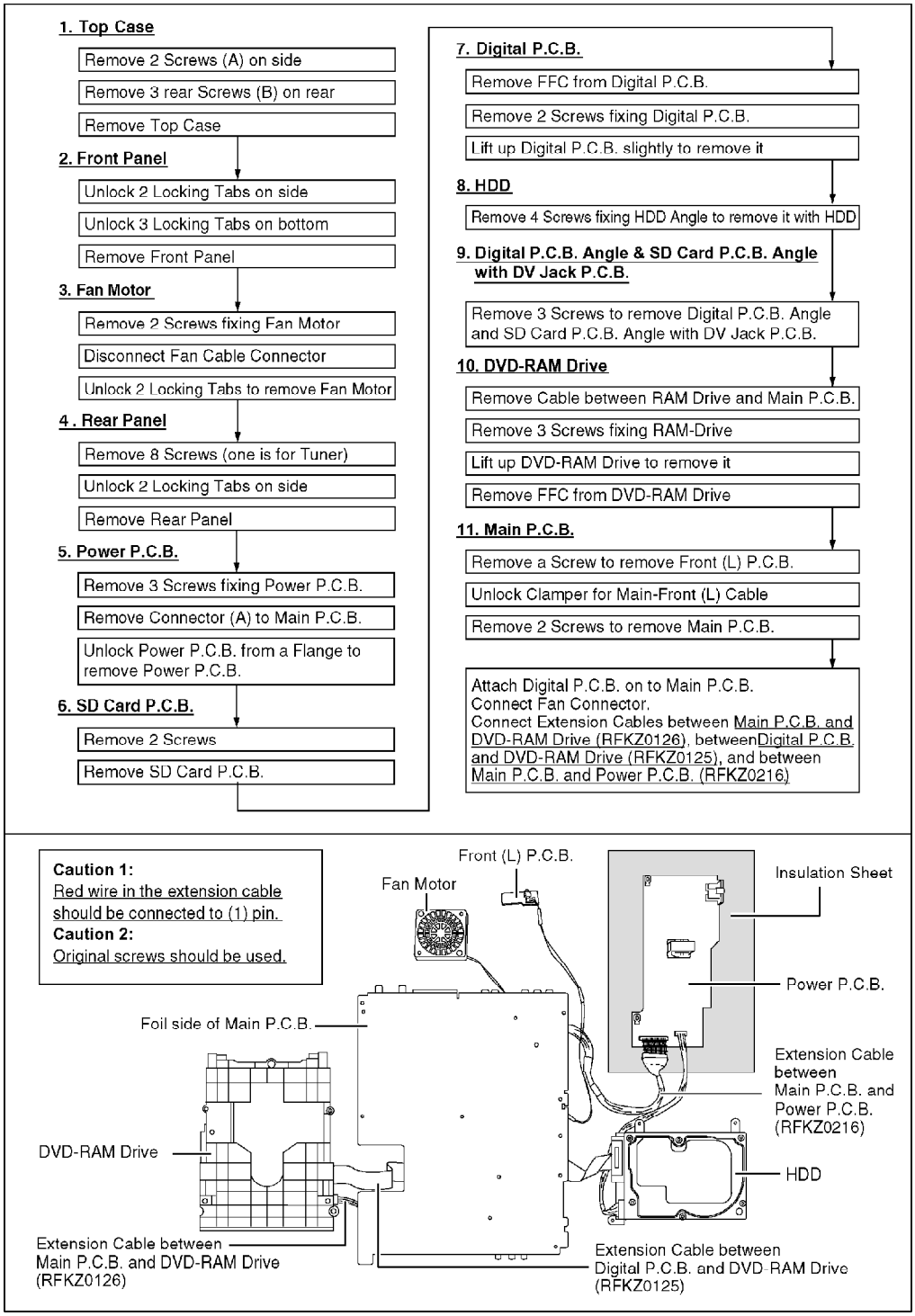
- Remove a Screw to remove SD Card P.C.B. Angle with DV Jack P.C.B.

- Remove 3 Screws fixing RAM Drive. While lifting up DVD-RAM Drive slightly, remove FFC and connect Extension Cables between DVD-RAM Drive and Digital P.C.B. (RFKZ0125). Connect Extension Cable between Main P.C.B. and Digital P.C.B. (RFKZ0260).

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



12.3. Checking and Repairing of Main P.C.B.



12.4. Checking and Repairing of DVD-RAM Drive

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Front Panel

Unlock 2 Locking Tabs on side

Unlock 3 Locking Tabs on bottom

Remove Front Panel

3. SD Card P.C.B.

Remove 2 Screws

Remove SD Card P.C.B.

4. Digital P.C.B.

Remove FFC from Digital P.C.B.

Remove 2 Screw fixing Digital P.C.B.

Lift up Digital P.C.B. slightly to remove it

5. HDD

Remove 4 Screws fixing HDD Angle to remove it with HDD

6. SD Card P.C.B. Angle with DV Jack P.C.B.

Remove a Screw to remove SD Card P.C.B. Angle with DV Jack P.C.B.

7. DVD-RAM Drive

Remove 3 Screws fixing RAM Drive

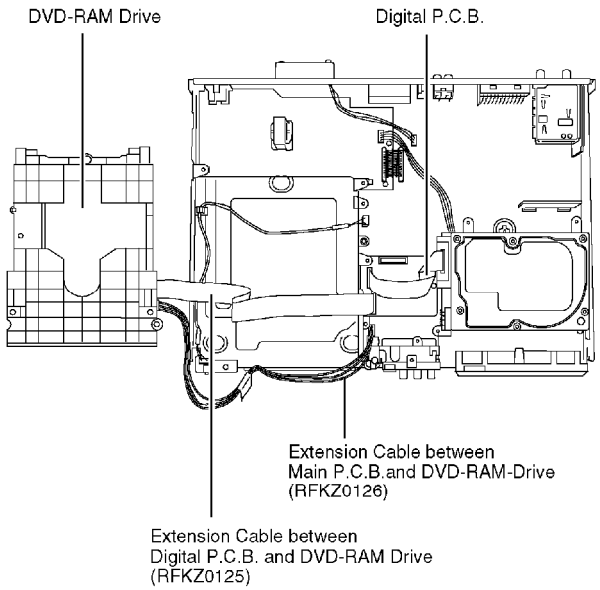
Lift up DVD-RAM Drive slightly and remove FFC from DVD-RAM Drive and remove Cable between DVD-RAM Drive and Main P.C.B.

Attach Digital P.C.B.

Put DVD-RAM Drive on side.

Connect Extension Cables between Main P.C.B. and DVD-RAM Drive, (RFKZ0126), and between Digital P.C.B. and DVD-RAM Drive (RFKZ0125).

Caution :
Original screws should be used.



12.5. Checking and Repairing of HDD

1. Top Case

Remove 2 Screws (A) on side

Remove 3 Screws (B) on rear

Remove Top Case

2. HDD

Disconnect HDD ATAPI Connector

Remove 4Pin Power Cable from HDD

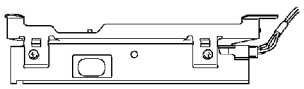
Connect HDD ATAPI Connector to Replacement HDD

Connect 4Pin Power Cable to Replacement HDD

Put Replacement HDD on Insulation Board

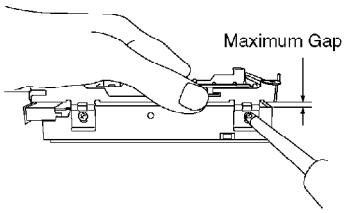
Caution for Removing HDD

Put HDD with HDD Angle up and down inversely and remove 4 screws to remove HDD so as not to give a shock to HDD.

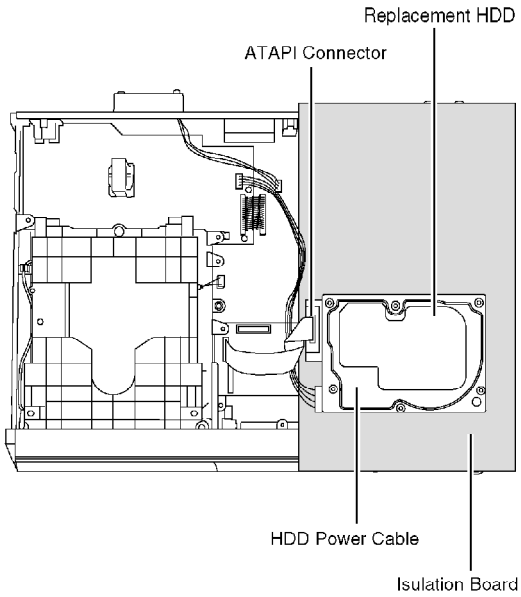


Caution for Attaching HDD

Put HDD up and down inversely, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.



Caution :
Original screws should be used.



13. Caution after replacing parts

13.1. After replacing the RAM Drive with new one

After replacing RAM drive unit, TEST mode is not necessary. Please confirm operation for RAM drive

13.2. When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	**While power is ON, short IC7502-4 pin (RESET) and the GND momentarily.**	**"RESET (L)" is transmitted to the of Timer Microprocessor (IC7501 then the unit operates normally.**

14. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recog
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the pict sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the pict sound or operation. *Panasonic DVD-RAM disc should be use recording and playback.
5	Model with the HDD: Perform auto recording and playback for one minute using the HDD.	No abnormality should be seen in the pict sound or operation.
6	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the pict sound or operation.
7	Models with SD Card Slot or DV Input Jack: In case of that the trouble is caused by SD card and/ or DV terminal.	Models with SD Card Slot or DV Input Jac 1) SD card: Check to be able to display an the picture. 2) DV terminal: Check to be able to record DVC.
8	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears FL displays. *[UNSUPPORT] display means the unit is updated to newest same version. Then ve is not necessary.
9	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR SERV] appears in the display. After checking it, turn the power off.
10	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLR LASER] appears in th display. After that, turn power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents
Picture	Block noise		Sound	Distorted sound
	Crosscut noise			Noise (static, background noise, etc.)
	Dot noise			The sound level is too low.
	Picture disruption			The sound level is too high.
	Not bright enough			The sound level changes.
	Too bright			
	Flickering color			
	Color fading			

15. Voltage and Waveform Chart

Note)
Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

15.1. Power P.C.B.

15.2. Main P.C.B.

15.3. Nicam Decoder P.C.B.

15.4. LED P.C.B.

15.5. P9001 Connector

15.6. Waveform Chart

16. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT

INITIAL/LOGO		ABBREVIATIONS
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/
	ETSCLK	40.5MHz)
		EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED
	FEO	INPUT
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER
		FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE

INITIAL/LOGO		ABBREVIATIONS
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	
	IREF	INTERPOLATION FLAG
	ISEL	I (CURRENT) REFERENCE
		INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK / PLLOK	CHANNEL PLL CLOCK PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECT CLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUB CODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAM DATA VALIDITY
	SBCK	SUB CODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA
		SYSTEM CLOCK

		SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING
	VDD	BALANCE)
	VFB	DRAIN POWER SUPPLY
	VREF	VOLTAGE
	VSS	VIDEO FEED BACK VOLTAGE REFERENCE SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		X VERTICAL SYNC OUTPUT

17. Block Diagram

17.1. Power Supply Block Diagram

17.2. Analog Video Block Diagram

17.3. Analog Audio Block Diagram

17.4. Timer Block Diagram

18. Schematic Diagram

18.1. Interconnection Schematic Diagram

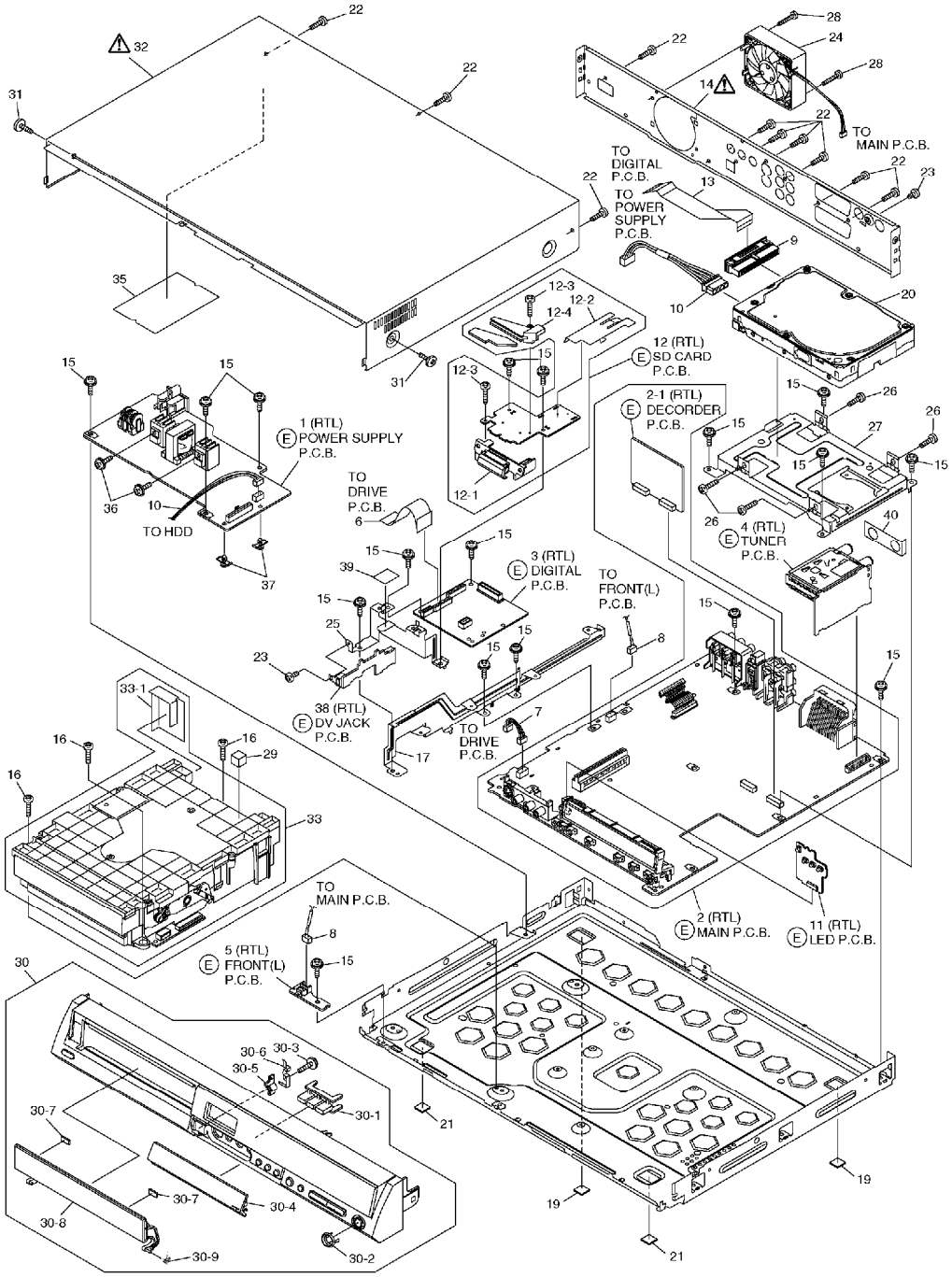
18.2. Power Supply Schematic Diagram

18.3. Main Net Section (Main P.C.B. (1/3)) Schematic Diagram (M)

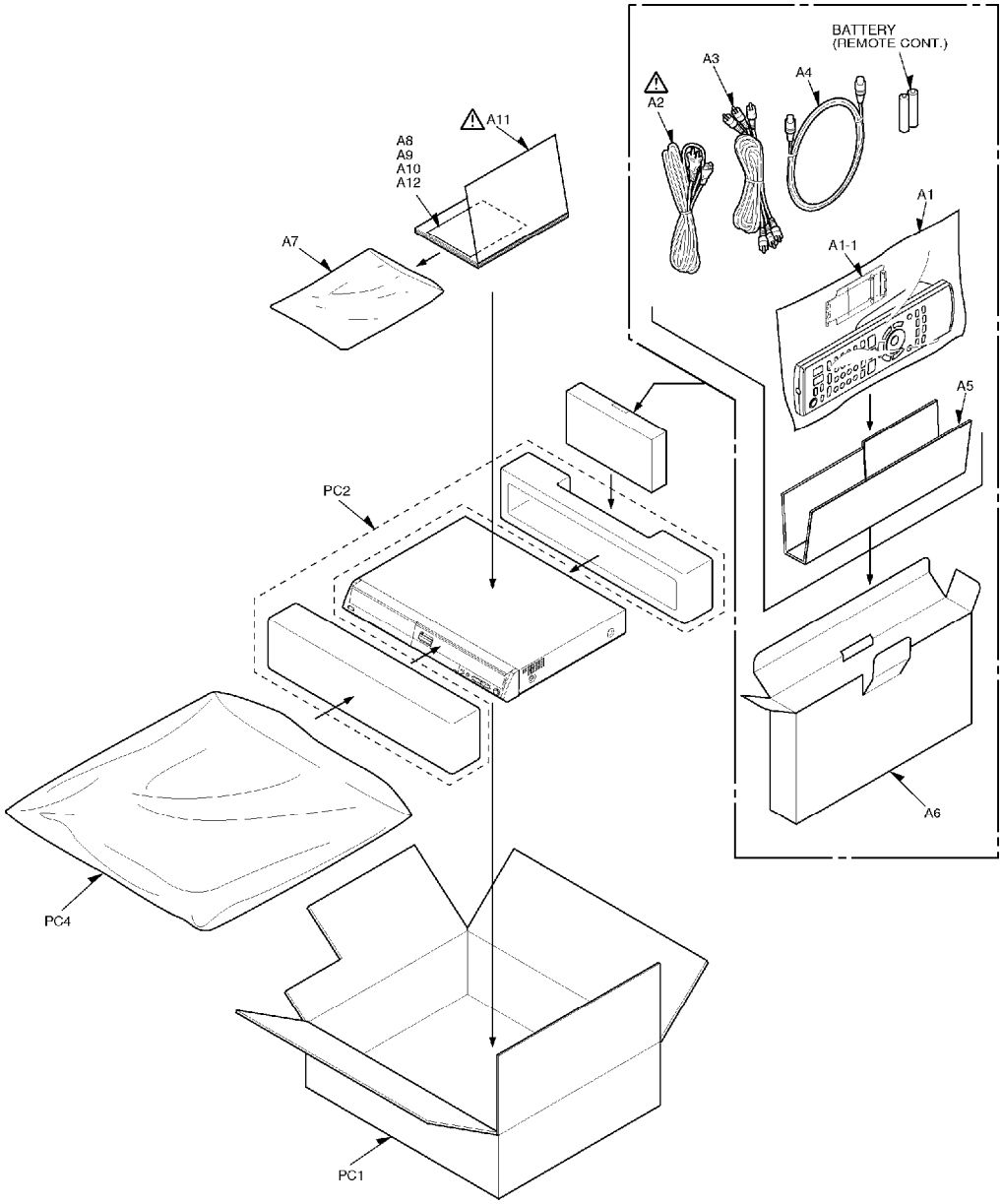
18.4. A/V I/O Section (Main P.C.B. (2/3)) Schematic Diagram (AI)

18.5. Timer Section (Main P.C.B. (3/3)) Schematic Diagram (T)

18.6. Tuner Pack Schematic Diagram



20.2. Packing & Accessories Section



21. Replacement Parts List

Notes:

***Important safety notice:**

Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

***Warning: This product uses a laser diode. Refer to caution statements.**

***Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).**

***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).**

***The marking (RTL) indicates the retention time is limited for this item. After the discontinuation**

of this assembly in production, it will no longer be available.
***"(IA)-(ID)", marks in Remarks indicate languages of instruction manuals. [(IA): English/German, (IB): Spanish/French, (IC): Swedish/Denish, (ID): Italian/Dutch]**
***All parts except parts mentioned [SPC] in the Remarks column are supplied from PAVCG.**
***Parts mentioned [SPC] are supplied from PAVC**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	01	CASING/ACCESSPRY/PACKING	1	(RTL)
1	VEP01961A	POWER SUPPLY P.C.B.	1	(RTL)
2	VEP79107L	MAIN P.C.B.	1	(RTL)
2-1	VEP07A51A	DECORDER P.C.B.	1	(RTL)
3	VEP79108B	DIGITAL P.C.B.	1	(RTL)
4	VEP07A77A	TUNER P.C.B.	1	(RTL)
5	VEP70115A	FRONT(L) P.C.B.	1	(RTL)
6	VWJ1775	FFC(40P)	1	
7	VEE1A60	WIRE WITH CONNECTOR(4P)	1	
8	VEE1A61	WIRE WITH CONNECTOR(2P)	1	
9	K1MZ40Z00002	HDD CONNECTOR	1	
10	VEE1A71	HDD CABLE(4P)	1	
11	VEP70116C	LED P.C.B.	1	(RTL)
12	VEP73121E	SD CARD P.C.B.	1	(RTL)
12-1	RYQ0556A-S	CARD HOLDER ASS'Y	1	
12-2	RMV0298	FFC HOLDER	1	
12-3	XTN2+8GFJ	SCREW	2	
12-4	RMA1697-W	SD REFLECTOR	1	
13	VWJ1780	FFC(40P)	1	
14	RGR0354F-E1	REAR PANEL	1	⚠
15	RHD30111	SCREW	17	
16	RHD30115	SCREW	3	
17	RMA1915-1	DIGITAL ANGLE	1	
19	RKA0177-K	LEG CUSHION	2	
20	RFKV0052HDK	HDD 200GB	1	
21	RKA0166-T	LEG RUBBER	2	
22	VHD0690-1	SCREW	10	
23	XSN3+4FJK	SCREW	2	
24	L6FAKCCE0003	FAN MOTOR	1	
25	RMA1910A	SD CARD ANGLE	1	
26	RHD32001	SCREW	4	
27	RMN0823-1	HDD BRACKET	1	
28	XTB3+25JFJK	SCREW	2	
29	RMX0325	MECHA SPACER	1	
30	RYP1269K-S	FRONT PANEL ASS'Y	1	
30-1	RGL0677-G	PANEL LIGHT	1	
30-2	RGK1885-S	REC BUTTON RING	1	
30-3	RHD26045	SCREW	1	
30-4	RKF0729J-S	PANEL DOOR	1	
30-5	RMR1698-S	SHAFT HOLDER	1	
30-6	RMC0660	MIRROR EARTH	1	
30-7	RMX0302	DOOR DAMPER	2	
30-8	RKF0730-S	TRAY DOOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
30-9	VMB3410	TRAY SPRING	1	
31	RHD30113	SCREW	2	
32	RKM0532A-S	TOP CASE	1	⚠
33	RFKNVXY1872	RAM DRIVE UNIT	1	(RTL)(SPC)
33-1	RMV0307	BARRIER	1	(SPC)
35	RMV0301	BARRIER	1	
36	XYN3+J8FJ	SCREW	2	
37	RMX0323	PCB SPACER	2	
38	VEP73133A	DV JACK P.C.B.	1	(RTL)
39	RMV0305	SD BARRIER	1	
40	RMC0625	TUNER GND	1	
A1	EUR7729KC0	REMOTE CONTROL ASS'Y	1	
A1-1	UR77EC2903A	BATTERY COVER	1	
A2	RJA0043-1C	AC CORD	1	⚠
A3	K2KA6CA00001	AV CORD	1	
A4	K1TWACC00001	RF COAXIAL CABLE	1	
A5	RPQ1594	PAD	1	
A6	RPQFD0008	ACCESSORY BOX	1	
A7	RPFD0005	POLYETHYLENE BAG(F.B)	1	
A8	RQTD0150-1A	EPG INSTRUCTIONS	1	
A9	RQCA1395	CARD CAUTION SHEET	1	
A10	RQCC2704	DVD MEDIA SHEET	1	
A11	RQT8203-D	OPERATING INSTRUCTIONS	1	(IA) ⚠
A11	RQT8204-E	OPERATING INSTRUCTIONS	1	(IB) ⚠
A11	RQT8205-H	OPERATING INSTRUCTIONS	1	(IC) ⚠
A11	RQT8206-J	OPERATING INSTRUCTIONS	1	(ID) ⚠
A12	RQCA1405-1	EPG CAUTION SHEET	1	
PC1	RPG7638	PACKING CASE	1	
PC2	RPN1798-1	CUSHION	1	
PC4	RPFD0004	MIRAMAT BAG	1	
■	02	VEP79107L	1	(MAIN P.C.B.)
C1501	F1H1E223A029	25V 0.022U	1	
C1503	F2A1C221A701	16V 220U	1	
C1504	F2A1E1010067	25V 100U	1	
C1505	F1J0J106A014	6.3V 10U	1	
C1506	F2A1A470A388	10V 47U	1	
C1507	F2A1A470A388	10V 47U	1	
C1508	F1H1H1030006	50V 0.01U	1	
C1509	F1H0J1050012	6.3V 1U	1	
C1510	F1H1A105A028	10V 1U	1	
C1511	F1H0J1050012	6.3V 1U	1	
C1512	F1H0J1050012	6.3V 1U	1	
C1515	F2A1A470A388	10V 47U	1	
C1517	ECJ1VC1H471J	50V 470P	1	
C1518	F2A0J681A550	6.3V 680U	1	
C1520	F1H1A105A028	10V 1U	1	
C1521	F1H0J1050012	6.3V 1U	1	
C1522	ECJ1VC1H331J	50V 330P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1526	F2A1A101A389	10V 100U	1	
C1527	F1J0J106A014	6.3V 10U	1	
C1535	F1H1A105A028	10V 1U	1	
C1536	F1J0J106A014	6.3V 10U	1	
C1538	F1H1A105A028	10V 1U	1	
C1539	F1H0J1050012	6.3V 1U	1	
C1540	F1H1H1030006	50V 0.01U	1	
C3001	F1H1C104A042	16V 0.1U	1	
C3002	F1H1H1030006	50V 0.01U	1	
C3003	F1H1C104A042	16V 0.1U	1	
C3004	F1H1C104A042	16V 0.1U	1	
C3005	F2A0J471A016	6.3V 470U	1	
C3006	F2A0J471A016	6.3V 470U	1	
C3007	F2A1A4710038	10V 470U	1	
C3008	F2A1A1010072	10V 100U	1	
C3009	F2A1A4710038	10V 470U	1	
C3010	F2A1A1010072	10V 100U	1	
C3011	F1H1C104A042	16V 0.1U	1	
C3012	F2A1A4710038	10V 470U	1	
C3013	F2A1A1010072	10V 100U	1	
C3014	F1H1C104A042	16V 0.1U	1	
C3015	F1H1C104A042	16V 0.1U	1	
C3016	F1H1C104A042	16V 0.1U	1	
C3017	F1H1C104A042	16V 0.1U	1	
C3018	F1H1C104A042	16V 0.1U	1	
C3019	F1H1C104A042	16V 0.1U	1	
C3020	F1H1C104A042	16V 0.1U	1	
C3021	F1H1C104A042	16V 0.1U	1	
C3022	F1H1C104A042	16V 0.1U	1	
C3025	F1H1C104A042	16V 0.1U	1	
C3026	F1H0J1050012	6.3V 1U	1	
C3027	F1H1C104A042	16V 0.1U	1	
C3028	ECEA1HKA4R7B	50V 4.7U	1	
C3029	F1H1C104A042	16V 0.1U	1	
C3030	ECEA1HKA4R7B	50V 4.7U	1	
C3031	F1H1H1030006	50V 0.01U	1	
C3032	ECEA0JKA101B	6.3V 100U	1	
C3033	F1H1H1030006	50V 0.01U	1	
C3034	F1H1H1030006	50V 0.01U	1	
C3035	ECEA0JKA101B	6.3V 100U	1	
C3038	F1H1C104A042	16V 0.1U	1	
C3039	F1H1C104A042	16V 0.1U	1	
C3057	F1H1H222A219	50V 2200P	1	
C3058	ECJ1VC1H471J	50V 470P	1	
C3059	F1H1H222A219	50V 2200P	1	
C3060	ECJ1VC1H471J	50V 470P	1	
C3064	F1H1C104A042	16V 0.1U	1	
C3070	F1H1H222A219	50V 2200P	1	
C3071	F1H1H222A219	50V 2200P	1	
C3072	F1H1C104A042	16V 0.1U	1	
C3910	F2A1V100A534	35V 10U	1	
C3911	F2A1V100A534	35V 10U	1	
C3914	F2A1H100A236	50V 10U	1	
C3915	F2A1H100A236	50V 10U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3916	F2A1H1R0A236	50V 1U	1	
C3917	F2A1H1R0A236	50V 1U	1	
C3918	F2A1H100A236	50V 10U	1	
C3919	F2A1H100A236	50V 10U	1	
C3928	F2A1V100A534	35V 10U	1	
C3929	F2A1H1R0A638	50V 1U	1	
C3935	F2A1E2210050	25V 220U	1	
C3951	F1H1H4700004	50V 47P	1	
C3952	F1H1H4700004	50V 47P	1	
C3953	ECJ1VC1H471J	50V 470P	1	
C3954	ECJ1VC1H471J	50V 470P	1	
C3955	ECJ1VC1H221J	50V 220P	1	
C3956	ECJ1VC1H221J	50V 220P	1	
C3957	ECJ1VC1H471J	50V 470P	1	
C3958	ECJ1VC1H471J	50V 470P	1	
C3961	ECJ1VC1H221J	50V 220P	1	
C3962	ECJ1VC1H221J	50V 220P	1	
C4003	F1H0J1050012	6.3V 1U	1	
C4005	F2A1H2200032	50V 22U	1	
C4006	F2A1V100A534	35V 10U	1	
C4008	F2A1E1010067	25V 100U	1	
C4019	F2A1C100A687	16V 10	1	
C4021	F2A1C100A687	16V 10	1	
C4023	F2A1V100A534	35V 10U	1	
C4024	F2A1E1010067	25V 100U	1	
C4025	F2A1V100A534	35V 10U	1	
C4027	F2A1H2200032	50V 22U	1	
C4028	F2A1V100A534	35V 10U	1	
C4033	F2A1C220A709	16V 22U	1	
C4034	F2A1C220A709	16V 22U	1	
C4055	F1H1C104A008	16V 0.1U	1	
C4056	F2A1C471A628	16V 470U	1	
C4057	ECJ2VC1H330J	50V 33P	1	
C4059	ECQV1H104JL3	50V 0.1U	1	
C4060	ECJ2VC1H330J	50V 33P	1	
C4061	F1H1C104A008	16V 0.1U	1	
C4062	F2A1C221A637	16V 220U	1	
C4063	F2A1C220A709	16V 22U	1	
C4064	F2A1C220A709	16V 22U	1	
C4065	F1H1C104A008	16V 0.1U	1	
C4067	F2A1E2210050	25V 220U	1	
C4070	F2A1C221A637	16V 220U	1	
C4072	F2A1C470A689	16V 47	1	
C4077	F1H1C104A008	16V 0.1U	1	
C4082	ECJ2VC1H561J	50V 560P	1	
C4083	ECJ2VC1H561J	50V 560P	1	
C4092	F2A1C470A689	16V 47	1	
C4901	F2A0J470A599	6.3V 47U	1	
C4902	F1H1C104A008	16V 0.1U	1	
C4903	F2A1E4700048	25V 47U	1	
C4904	F1H1C104A008	16V 0.1U	1	
C4907	ECHR1H223JZ3	50V 0.22U	1	
C7401	F2A1C471A628	16V 470U	1	
C7402	ECJ1VC1H471J	50V 470P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7403	F2A0J470A599	6.3V 47U	1	
C7404	F1H0J1050012	6.3V 1U	1	
C7405	F1H1C104A042	16V 0.1U	1	
C7406	F1H1A105A028	10V 1U	1	
C7407	F1H1C104A042	16V 0.1U	1	
C7408	F1H1C104A042	16V 0.1U	1	
C7416	F2A1E4700048	25V 47U	1	
C7427	F1H1H222A219	50V 2200P	1	
C7439	F1H1C104A042	16V 0.1U	1	
C7442	F2A1C470A689	16V 47	1	
C7445	ECHR1H223JZ3	50V 0.22U	1	
C7447	F1H0J1050012	6.3V 1U	1	
C7448	F1H0J1050012	6.3V 1U	1	
C7501	F1J0J475A008	6.3V 4.7U	1	
C7502	F1H1H1010005	50V 100P	1	
C7503	F1J0J475A008	6.3V 4.7U	1	
C7504	F1H1C104A042	16V 0.1U	1	
C7505	F1H1C104A042	16V 0.1U	1	
C7507	F1H1C104A008	16V 0.1U	1	
C7510	F1H1C104A042	16V 0.1U	1	
C7511	F1H1H1010005	50V 100P	1	
C7512	F1H1C104A008	16V 0.1U	1	
C7516	ECJ1VC1H180J	50V 18P	1	
C7517	ECJ1VC1H180J	50V 18P	1	
C7518	ECJ1VC1H220J	50V 22P	1	
C7519	ECJ1VC1H180J	50V 18P	1	
C7520	F1H1C104A042	16V 0.1U	1	
C7522	F1H1H1010005	50V 100P	1	
C7523	F1H1H1030006	50V 0.01U	1	
C7524	F1H1C104A042	16V 0.1U	1	
C7528	F1H1C104A008	16V 0.1U	1	
C7529	ECEA0JKA470B	6.3V 47U	1	
C7531	ECJ1VC1H100D	50V 10P	1	
C7532	ECJ1VC1H100D	50V 10P	1	
C7533	ECEA0JKA470B	6.3V 47U	1	
C7534	F1H1H1030006	50V 0.01U	1	
C7535	F1H1C104A008	16V 0.1U	1	
C7539	F1H1H4700004	50V 47P	1	
C7540	F1H1H1030006	50V 0.01U	1	
C7541	F1H1H4700004	50V 47P	1	
C7542	F1H1C104A042	16V 0.1U	1	
C7543	F1H1H4700004	50V 47P	1	
C7544	F1H1C104A042	16V 0.1U	1	
C7546	F1H0J1050012	6.3V 1U	1	
C7547	F1H0J1050012	6.3V 1U	1	
C7550	ECEA0JKA470B	6.3V 47U	1	
C7551	F1H1C104A042	16V 0.1U	1	
C7552	ECJ1VC1H221J	50V 220P	1	
C7553	ECJ1VC1H221J	50V 220P	1	
C7554	F1H1H1030006	50V 0.01U	1	
C7555	F1H1H1030006	50V 0.01U	1	
C7556	F1H1H1030006	50V 0.01U	1	
C7557	F1H1H1030006	50V 0.01U	1	
C7558	F1H1H1030006	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7565	F2A1E221A586	25V 220U	1	
C7569	ECQB1H222KF3	50V 2200P	1	
C7570	F2A1V470A533	35V 47U	1	
C7571	F2A1H2200032	50V 22U	1	
C7572	F2A1A2210063	10V 220U	1	
C7573	F2A1H2200032	50V 22U	1	
C7577	F1H1C104A042	16V 0.1U	1	
C7578	ECEA0JKA470B	6.3V 47U	1	
C7579	ECEA0JKA470B	6.3V 47U	1	
C7581	F1H1H1030006	50V 0.01U	1	
C7584	F4D55473A013	5.5V 0.047U	1	
C7585	ECEA0JKA101B	6.3V 100U	1	
C7587	F1H0J1050012	6.3V 1U	1	
C7588	F1H1H1030006	50V 0.01U	1	
C7590	F1H1C104A008	16V 0.1U	1	
C7592	F1H1A105A004	10V 1U	1	
D1501	MA2C165001VT	DIODE	1	
D3901	MA2C165001VT	DIODE	1	
D4005	MA3Z142D0LG	DIODE	1	
D4006	MA3Z142D0LG	DIODE	1	
D7403	MA2C165001VT	DIODE	1	
D7501	B0BA03600021	DIODE	1	
D7502	B0ACCK000005	DIODE	1	
D7504	MAZ4300NLF	DIODE	1	
D7505	B0AADM000003	DIODE	1	
D7506	B0AADM000003	DIODE	1	
D7507	B0AAGM000007	DIODE	1	
D7508	MAZ4240NMF	DIODE	1	
D7509	B0JDCE000002	DIODE	1	
DP7501	A2BD00000099	FL DISPLAY TUBE	1	
IC1501	C0CBCDD00006	IC	1	
IC1502	C0CBCBD00018	IC	1	
IC1504	C0CBCYH00003	IC	1	
IC1505	C0CBCBD00018	IC	1	
IC1510	C0CBCDG00006	IC	1	
IC1511	C0CBCDD00008	IC	1	
IC3001	C1AB00002100	IC	1	
IC4009	C0ABBB000216	IC	1	
IC4011	C0DBAHD00013	IC	1	
IC4012	C0ABBB000118	IC	1	
IC7401	C0CBCYG00004	IC	1	
IC7402	C0DBCHD00004	IC	1	
IC7403	C0CBCDD00006	IC	1	
IC7501	C2CBKH000182	IC	1	
IC7502	C0EBE0000504	IC	1	
IC7503	C3EBJC000055	IC	1	
IC7504	C1ZBZ0002791	IC	1	
IC7505	C0EBJ0000336	IC	1	
IC7506	C0EBE0000457	IC	1	
IC7507	C0ABBA000146	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IP1501	K5H3022A0013	IC PROTECTOR	1	⚠
IP7501	K5H7512A0010	IC PROTECTOR	1	⚠
IR7501	B3RAD0000092	REMOTE SENSOR	1	
JK3001	K2HA612B0055	JACK,AV4/IN	1	
JK3002	K1U415B00001	JACK,AV3/IN	1	
JK3003	K2HA210B0002	JACK,S-VIDEO	1	
JK3901	K1FB242B0005	JACK,AV1/2	1	
JK3903	K1U407B00006	JACK,AV OUT	1	
K4002	D0YDR0000006	1/16W 0	1	
K7503	D0YBR0000002	1/16W 0	1	
K7504	D0YBR0000002	1/16W 0	1	
K7506	D0YBR0000002	1/16W 0	1	
K7507	D0YBR0000002	1/16W 0	1	
K7512	D0YBR0000002	1/16W 0	1	
L1501	G0A220GA0026	COIL 22UH	1	
L1504	G0A100HA0023	COIL 10UH	1	
L4901	G0C220KA0065	COIL 22UH	1	
L7403	G0C2R2JA0019	COIL 2.2UH	1	
L7404	G0A220GA0026	COIL 22UH	1	
L7501	G0C390JA0055	COIL 39UH	1	
LB1503	J0JKB0000003	COIL	1	
LB1504	J0JKB0000003	COIL	1	
LB1506	J0JKB0000003	COIL	1	
LB3001	J0JGC0000020	COIL	1	
LB3002	J0JGC0000020	COIL	1	
LB3003	J0JGC0000020	COIL	1	
LB3005	J0JBC0000011	COIL	1	
LB3006	J0JBC0000011	COIL	1	
LB3007	J0JBC0000011	COIL	1	
LB3008	J0JBC0000011	COIL	1	
LB3009	J0JCC0000103	COIL	1	
LB3010	J0JCC0000103	COIL	1	
LB3011	J0JCC0000103	COIL	1	
LB3012	J0JBC0000011	COIL	1	
LB3013	J0JBC0000011	COIL	1	
LB3907	J0JBC0000011	COIL	1	
LB3908	J0JBC0000011	COIL	1	
LB3911	J0JGC0000020	COIL	1	
LB3912	J0JBC0000011	COIL	1	
LB3913	J0JBC0000011	COIL	1	
LB7401	J0JGC0000020	COIL	1	
LB7406	J0JHC0000032	COIL	1	
LB7408	J0JHC0000032	COIL	1	
LB7409	J0JHC0000032	COIL	1	
LB7414	J0JHC0000032	COIL	1	
LB7415	J0JHC0000032	COIL	1	
LB7501	D0YBR0000002	CHIP RESISTOR	1	
LB7507	J0JGC0000020	COIL	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB7508	J0JGC0000020	COIL	1	
LB7509	J0JCC0000060	COIL	1	
LB7510	J0JGC0000020	COIL	1	
LB7515	D0YBR0000002	CHIP RESISTOR	1	
LB7516	D0YBR0000002	CHIP RESISTOR	1	
LB7517	D0YBR0000002	CHIP RESISTOR	1	
LB7519	J0JKB0000037	COIL	1	
P1501	K1KA23A00003	CONNECTOR(23P)	1	
P1502	K1KA04AA0180	CONNECTOR(4P)	1	
P7402	K1KA88A00002	CONNECTOR(88P)	1	
P7504	K1KA03AA0301	CONNECTOR(3P)	1	
P7506	K1KA03AA0301	CONNECTOR(3P)	1	
P7507	K1KA06AA0288	CONNECTOR(6P)	1	
PP7401	K1KA18AA0288	CONNECTOR(18P)	1	
Q3907	2SD132800L	TRANSISTOR	1	
Q3908	2SD132800L	TRANSISTOR	1	
Q3909	2SD132800L	TRANSISTOR	1	
Q3910	2SD132800L	TRANSISTOR	1	
Q4004	2SB1218ARL	TRANSISTOR	1	
Q4006	2SD132800L	TRANSISTOR	1	
Q4007	2SD132800L	TRANSISTOR	1	
Q4008	2SD132800L	TRANSISTOR	1	
Q4009	2SD132800L	TRANSISTOR	1	
Q7401	2SD1819ARL	TRANSISTOR	1	
Q7501	2SB1218ARL	TRANSISTOR	1	
Q7502	2SD1819ARL	TRANSISTOR	1	
Q7503	2SB1218ARL	TRANSISTOR	1	
Q7504	2SD1819ARL	TRANSISTOR	1	
Q7506	2SD0601ARN	TRANSISTOR	1	
Q7507	2SD0601ARN	TRANSISTOR	1	
Q7508	2SD1819ARL	TRANSISTOR	1	
Q7510	2SD1994BR1VT	TRANSISTOR	1	
Q7511	B1ABMD000004	TRANSISTOR	1	
QR3914	UNR521300L	TRANSISTOR	1	
QR4002	UNR521100L	TRANSISTOR	1	
QR4003	UNR521100L	TRANSISTOR	1	
QR4004	UNR521100L	TRANSISTOR	1	
QR4005	UNR521100L	TRANSISTOR	1	
QR7401	UNR521300L	TRANSISTOR	1	
QR7403	UNR521500L	TRANSISTOR	1	
QR7404	UNR521500L	TRANSISTOR	1	
QR7501	UNR521300L	TRANSISTOR	1	
QR7503	UNR521400L	TRANSISTOR	1	
QR7506	UNR521200L	TRANSISTOR	1	
QR7507	UNR521000L	TRANSISTOR	1	
QR7508	UNR521400L	TRANSISTOR	1	
R1503	D0GB332JA002	1/10W 3.3K	1	
R1504	D0GB101JA002	1/10W 100	1	
R1505	ERDS2TJ271T	1/4W 270	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1506	ERJ3RBD103V	1/16W 10K	1	
R1507	ERJ3RBD152V	1/16W 1.5K	1	
R1508	ERJ3RBD153V	1/16W 15K	1	
R1511	ERDS2TJ271T	1/4W 270	1	
R1512	ERDS2TJ271T	1/4W 270	1	
R1513	ERDS2TJ271T	1/4W 270	1	
R1515	ERDS2TJ271T	1/4W 270	1	
R1520	D0GB822JA002	1/10W 8.2K	1	
R3006	D0GB822JA002	1/10W 8.2K	1	
R3007	D0GB330JA002	1/10W 33	1	
R3054	D0GB750JA002	1/10W 75	1	
R3055	D0GB750JA002	1/10W 75	1	
R3056	D0GB750JA002	1/10W 75	1	
R3057	D0GB750JA002	1/10W 75	1	
R3058	D0GB750JA002	1/10W 75	1	
R3059	D0GB750JA002	1/10W 75	1	
R3060	D0GB750JA002	1/10W 75	1	
R3061	D0GB750JA002	1/10W 75	1	
R3062	D0GB750JA002	1/10W 75	1	
R3901	D1BB75R0A010	2W 75	1	
R3902	D1BB75R0A010	2W 75	1	
R3903	D1BB75R0A010	2W 75	1	
R3912	D0GB103JA002	1/10W 10K	1	
R3913	D0GB103JA002	1/10W 10K	1	
R3914	D0GB471JA002	1/10W 470	1	
R3918	D0GB471JA002	1/10W 470	1	
R3919	D1BB75R0A010	2W 75	1	
R3920	D1BB75R0A010	2W 75	1	
R3921	D1BB75R0A010	2W 75	1	
R3922	D0GB471JA002	1/10W 470	1	
R3923	D0GB471JA002	1/10W 470	1	
R3924	ERDS2TJ221T	1/4W 220	1	
R3925	D1BB75R0A010	2W 75	1	
R3926	D1BB75R0A010	2W 75	1	
R3927	D1BB75R0A010	2W 75	1	
R3928	D0GB750JA002	1/10W 75	1	
R3929	D0GB750JA002	1/10W 75	1	
R3930	D0GB750JA002	1/10W 75	1	
R3932	D0GB750JA002	1/10W 75	1	
R3934	D0GB750JA002	1/10W 75	1	
R3935	D0GB750JA002	1/10W 75	1	
R3975	D0GB101JA002	1/10W 100	1	
R3976	D0GB101JA002	1/10W 100	1	
R3983	D0GB103JA002	1/10W 10K	1	
R3984	D0GB103JA002	1/10W 10K	1	
R3987	D0GB473JA002	1/10W 47K	1	
R3988	D0GB102JA002	1/10W 1K	1	
R3989	D0GB102JA002	1/10W 1K	1	
R3990	D0GB473JA002	1/10W 47K	1	
R3991	D0GB473JA002	1/10W 47K	1	
R3992	D0GB102JA002	1/10W 1K	1	
R3993	D0GB102JA002	1/10W 1K	1	
R3994	D0GB473JA002	1/10W 47K	1	
R3995	D0GB153JA002	1/10W 15K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3996	D0GB124JA002	1/10W 120K	1	
R3997	D0GB124JA002	1/10W 120K	1	
R3998	D0GB154JA002	1/10W 150K	1	
R3999	D0GB154JA002	1/10W 150K	1	
R4002	D0GB103JA002	1/10W 10K	1	
R4004	D0GB103JA002	1/10W 10K	1	
R4006	D0GB823JA002	1/10W 82K	1	
R4007	D0GB823JA002	1/10W 82K	1	
R4008	D0GB823JA002	1/10W 82K	1	
R4010	D0GB473JA002	1/10W 47K	1	
R4011	D0GB473JA002	1/10W 47K	1	
R4013	D0GB823JA002	1/10W 82K	1	
R4014	D0GB103JA002	1/10W 10K	1	
R4017	D0GB103JA002	1/10W 10K	1	
R4046	D0HB752ZA002	1/10W 7.5K	1	
R4047	D0HB752ZA002	1/10W 7.5K	1	
R4055	D0HB123ZA002	1/16W 12K	1	
R4057	D0HB123ZA002	1/16W 12K	1	
R4066	D0HB103ZA002	1/10W 10K	1	
R4067	D0HB103ZA002	1/10W 10K	1	
R4071	D0GB473JA002	1/10W 47K	1	
R4074	D0GB473JA002	1/10W 47K	1	
R4076	D0GB821JA002	1/10W 820	1	
R4077	D0GB101JA002	1/10W 100	1	
R4078	D0GB272JA002	1/10W 2.7K	1	
R4079	D0GB272JA002	1/10W 2.7K	1	
R4080	D0GB101JA002	1/10W 100	1	
R4081	D0GB821JA002	1/10W 820	1	
R4088	D0GB272JA002	1/10W 2.7K	1	
R4089	D0GB272JA002	1/10W 2.7K	1	
R4090	D0GB121JA002	1/10W 120	1	
R4093	D0GB121JA002	1/10W 120	1	
R4094	D0GB223JA002	1/10W 22K	1	
R4903	D0YBR0000002	1/16W 0	1	
R7401	D0YBR0000002	1/16W 0	1	
R7402	D0GB103JA002	1/10W 10K	1	
R7403	D0GB153JA002	1/10W 15K	1	
R7404	D0GB223JA002	1/10W 22K	1	
R7405	D0GB471JA002	1/10W 470	1	
R7406	D0GB474JA002	1/10W 470K	1	
R7407	D0GB103JA002	1/10W 10K	1	
R7408	D0GB153JA002	1/10W 15K	1	
R7410	D0GB821JA002	1/10W 820	1	
R7421	D0GB101JA002	1/10W 100	1	
R7422	D0GB101JA002	1/10W 100	1	
R7438	D0GB220JA002	1/10W 22	1	
R7439	D0GB220JA002	1/10W 22	1	
R7440	D0GB220JA002	1/10W 22	1	
R7441	D0GB220JA002	1/10W 22	1	
R7442	D0GB220JA002	1/10W 22	1	
R7443	D0GB101JA002	1/10W 100	1	
R7444	ERJ3RED300V	1/16W 30	1	
R7445	ERJ3RBD682V	1/16W 6.8K	1	
R7446	ERJ3RBD202V	1/16W 2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7501	D0GB102JA002	1/10W 1K	1	
R7502	D0GB392JA002	1/10W 3.9K	1	
R7503	D0GB104JA002	1/10W 100K	1	
R7504	D0GB102JA002	1/10W 1K	1	
R7505	D1BB1502A010	2W 1.5K	1	
R7506	D0GB104JA002	1/10W 100K	1	
R7507	D1BB15010002	2W 150	1	
R7508	D1BB5601A010	2W 560	1	
R7510	D0YBR0000002	1/16W 0	1	
R7515	D0GB472JA002	1/10W 4.7K	1	
R7518	ERJ3RBD273V	1/16W 27K	1	
R7527	D0GB101JA002	1/10W 100	1	
R7528	D0GB101JA002	1/10W 100	1	
R7529	D0GB101JA002	1/10W 100	1	
R7531	D0GB104JA002	1/10W 100K	1	
R7532	D0GB332JA002	1/10W 3.3K	1	
R7533	D0YBR0000002	1/16W 0	1	
R7534	D0GB103JA002	1/10W 10K	1	
R7535	D0GB101JA002	1/10W 100	1	
R7536	D0GB101JA002	1/10W 100	1	
R7537	D0GB101JA002	1/10W 100	1	
R7543	D0GB101JA002	1/10W 100	1	
R7544	D0GB101JA002	1/10W 100	1	
R7548	D0GB472JA002	1/10W 4.7K	1	
R7549	D0GB472JA002	1/10W 4.7K	1	
R7550	D0GB223JA002	1/10W 22K	1	
R7551	D0GB101JA002	1/10W 100	1	
R7552	D0GB101JA002	1/10W 100	1	
R7553	D0GB101JA002	1/10W 100	1	
R7557	D0GB511JA002	1/10W 510	1	
R7558	D0GB202JA002	1/10W 2K	1	
R7559	D0GB202JA002	1/10W 2K	1	
R7560	D0GB472JA002	1/10W 4.7K	1	
R7561	D0GB101JA002	1/10W 100	1	
R7562	D0GB101JA002	1/10W 100	1	
R7563	D0GB101JA002	1/10W 100	1	
R7564	D0GB101JA002	1/10W 100	1	
R7565	D0GB101JA002	1/10W 100	1	
R7566	D0GB101JA002	1/10W 100	1	
R7567	D0GB101JA002	1/10W 100	1	
R7568	D0GB101JA002	1/10W 100	1	
R7570	D0GB392JA002	1/10W 3.9K	1	
R7571	D0GB101JA002	1/10W 100	1	
R7574	D0GB223JA002	1/10W 22K	1	
R7575	D0GB101JA002	1/10W 100	1	
R7576	D0GB102JA002	1/10W 1K	1	
R7577	D0GB103JA002	1/10W 10K	1	
R7578	D0GB103JA002	1/10W 10K	1	
R7579	D0GB223JA002	1/10W 22K	1	
R7582	D0GB104JA002	1/10W 100K	1	
R7583	D0GB472JA002	1/10W 4.7K	1	
R7584	D0GB473JA002	1/10W 47K	1	
R7585	D0GB225JA002	1/10W 2200K	1	
R7586	D0GB273JA002	1/10W 27K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7587	D0GB224JA002	1/10W 220K	1	
R7588	D0GB104JA002	1/10W 100K	1	
R7589	D0GB221JA002	1/10W 220	1	
R7590	D0GB104JA002	1/10W 100K	1	
R7597	D0GB822JA002	1/10W 8.2K	1	
R7598	D0GB822JA002	1/10W 8.2K	1	
R7599	D0GB822JA002	1/10W 8.2K	1	
R7600	D0GB103JA002	1/10W 10K	1	
R7601	D0GB102JA002	1/10W 1K	1	
R7602	D0GB682JA002	1/10W 6.8K	1	
R7606	D1BB3902A010	2W 3.9K	1	
R7607	D0GB101JA002	1/10W 100	1	
R7608	D1BB4302A010	2W 4.3K	1	
R7612	D0GB332JA002	1/10W 3.3K	1	
R7614	D0GB470JA002	1/10W 47	1	
R7615	D0GB473JA002	1/10W 47K	1	
R7616	D0GB473JA002	1/10W 47K	1	
R7617	ERDS2TJ331T	1/4W 330	1	
R7619	D0GB103JA002	1/10W 10K	1	
R7620	D0GB473JA002	1/10W 47K	1	
R7621	D0GB104JA002	1/10W 100K	1	
R7622	D0GB153JA002	1/10W 15K	1	
R7623	D0GB181JA002	1/10W 180	1	
R7624	D0GB103JA002	1/10W 10K	1	
R7625	D0GB103JA002	1/10W 10K	1	
R7626	D0GB821JA002	1/10W 820	1	
R7627	D0GB303JA002	1/10W 30K	1	
R7628	D0GB223JA002	1/10W 22K	1	
R7629	D0GB682JA002	1/10W 6.8K	1	
R7630	D0GB682JA002	1/10W 6.8K	1	
R7631	D0GB682JA002	1/10W 6.8K	1	
R7639	D0GB272JA002	1/10W 2.7K	1	
R7640	D0GB272JA002	1/10W 2.7K	1	
R7641	D0GB473JA002	1/10W 47K	1	
R7642	D0GB562JA002	1/10W 5.6K	1	
R7643	D0GB562JA002	1/10W 5.6K	1	
R7644	D0GB222JA002	1/10W 2.2K	1	
R7648	ERDS2TJ330T	1/4W 33	1	
R7649	D0GB101JA002	1/10W 100	1	
R7651	D0GB472JA002	1/10W 4.7K	1	
R7652	D0GB101JA002	1/10W 100	1	
R7653	D0GB101JA002	1/10W 100	1	
R7655	D0GB101JA002	1/10W 100	1	
S7501	EVQPC105K	SWITCH	1	
S7502	EVQPC105K	SWITCH	1	
S7503	EVQPC105K	SWITCH	1	
S7504	EVQPC105K	SWITCH	1	
S7505	EVQPC105K	SWITCH	1	
S7506	EVQPC105K	SWITCH	1	
S7507	EVQPC105K	SWITCH	1	
S7508	EVQPC105K	SWITCH	1	
T7501	G4D1C0000003	TRANSFORMER	1	⚠

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W701	D0YBR0000002	1/16W 0	1	
W702	D0YDR0000006	1/16W 0	1	
W703	D0YDR0000006	1/16W 0	1	
W704	D0YDR0000006	1/16W 0	1	
W705	D0YDR0000006	1/16W 0	1	
W706	D0YBR0000002	1/16W 0	1	
W707	D0YBR0000002	1/16W 0	1	
W708	D0YBR0000002	1/16W 0	1	
W709	D0YBR0000002	1/16W 0	1	
W711	D0YBR0000002	1/16W 0	1	
W712	D0YBR0000002	1/16W 0	1	
W713	D0YBR0000002	1/16W 0	1	
W714	D0YBR0000002	1/16W 0	1	
W715	D0YBR0000002	1/16W 0	1	
W716	D0YBR0000002	1/16W 0	1	
W717	D0YBR0000002	1/16W 0	1	
W718	D0YBR0000002	1/16W 0	1	
W719	D0YBR0000002	1/16W 0	1	
W720	D0YBR0000002	1/16W 0	1	
W721	D0YBR0000002	1/16W 0	1	
W722	D0YBR0000002	1/16W 0	1	
W723	D0YBR0000002	1/16W 0	1	
W724	D0YBR0000002	1/16W 0	1	
W725	D0YBR0000002	1/16W 0	1	
W726	D0YBR0000002	1/16W 0	1	
W727	D0YBR0000002	1/16W 0	1	
W728	D0YBR0000002	1/16W 0	1	
W729	D0YDR0000006	1/16W 0	1	
W730	D0YBR0000002	1/16W 0	1	
W731	D0YBR0000002	1/16W 0	1	
X7501	H0D100500018	CRYSTAL OSCILLATOR	1	
X7502	H0A327200108	CRYSTAL OSCILLATOR	1	
■	03	VEP07A51A	1	(DECORDER P.C.B.)
C7301	F1H1C104A008	16V 0.1U	1	
C7302	D0YBR0000002	1/16W 0	1	
C7303	ECEA0JKA101B	6.3V 100U	1	
C7305	ECEA0JKA101B	6.3V 100U	1	
C7306	F1H1H1030007	50V 0.01U	1	
C7307	ECJ1VC1H100D	50V 10P	1	
C7308	ECJ1VC1H100D	50V 10P	1	
C7309	F1H1H1010005	50V 100P	1	
C7310	F1H1H1010005	50V 100P	1	
C7311	F1H1H1010005	50V 100P	1	
C7312	ECEA1CKA100B	16V 10U	1	
C7313	ECEA1CKA100B	16V 10U	1	
C7314	F1H1C104A008	16V 0.1U	1	
C7317	ECEA1CKA470B	16V 47U	1	
C7318	ECEA1CKA100B	16V 10U	1	
C7323	ECJ1VC1H102J	50V 1000P	1	
C7324	F1H1C104A008	16V 0.1U	1	

[illegible]	[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7329	D0YBR0000002	1/16W 0	1	
C7330	D0GB822JA002	1/10W 8.2K	1	
C7332	F1H1C104A008	16V 0.1U	1	
C7333	F1H1C104A042	16V 0.1U	1	
C7334	ECEA1HKA2R2B	50V 2.2U	1	
C7335	F1H1C104A008	16V 0.1U	1	
IC7301	C1AB00002225	IC	1	
IC7302	C0EAH0000051	IC	1	
K7301	D0YBR0000002	1/16W 0	1	
K7302	D0YBR0000002	1/16W 0	1	
K7303	D0YBR0000002	1/16W 0	1	
K7305	D0YBR0000002	1/16W 0	1	
L7303	G0C1R0JA0019	COIL 1UH	1	
LB7301	J0JCC0000124	COIL	1	
LB7302	J0JCC0000124	COIL	1	
LB7303	J0JCC0000080	COIL	1	
PK7301	K1MM07B00002	CONNECTOR(7P)	1	
PK7302	K1MM06B00002	CONNECTOR(6P)	1	
R7301	D0YBR0000002	1/16W 0	1	
R7304	D0GB101JA002	1/10W 100	1	
R7307	D0YBR0000002	1/16W 0	1	
R7309	D0GB103JA002	1/10W 10K	1	
R7311	D0GB221JA002	1/10W 220	1	
R7312	D1BB2200A010	2W 22	1	
R7313	D1BB2200A010	2W 22	1	
R7314	D0YBR0000002	1/16W 0	1	
R7315	D0YBR0000002	1/16W 0	1	
R7317	D0YBR0000002	1/16W 0	1	
R7319	D0YBR0000002	1/16W 0	1	
R7322	D0YBR0000002	1/16W 0	1	
R7324	D0GB101JA002	1/10W 100	1	
R7325	D0GB101JA002	1/10W 100	1	
W6	D0YBR0000002	1/16W 0	1	
W7	D0YBR0000002	1/16W 0	1	
X7301	H0D245500016	CRYSTAL OSCILLATOR	1	
■	04	VEP07A77A	1	(TUNER P.C.B.)
C7809	F1H1H1030006	50V 0.01U	1	
C7813	F2A0J470A599	6.3V 47U	1	
C7814	F2A1H2200032	50V 22U	1	
C7817	F2A0J470A599	6.3V 47U	1	
C7818	F1H1H330A736	50V 33P	1	
C7819	F1H1H330A736	50V 33P	1	
C7820	F1H1C104A042	16V 0.1U	1	
C7821	F1H1H1030006	50V 0.01U	1	

[illegible]	[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7822	F1H1H1030006	50V 0.01U	1	
C7824	F2A0J470A599	6.3V 47U	1	
C7828	F1H1H1030006	50V 0.01U	1	
C7838	F2A1E4700048	25V 47U	1	
D7802	MAZ4300NMF	DIODE	1	
K7808	D0YBR0000002	1/16W 0	1	
K7809	D0YBR0000002	1/16W 0	1	
K7810	D0YBR0000002	1/16W 0	1	
LB7802	J0JHC0000032	COIL	1	
LB7803	J0JHC0000032	COIL	1	
LB7804	J0JHC0000032	COIL	1	
PS7801	K1KB18B00012	CONNECTOR(18P)	1	
R7811	ERG2SJ471E	2W 470	1	
R7815	D0GB471JA002	1/10W 470	1	
R7816	D0GB471JA002	1/10W 470	1	
R7817	ERG2SJ471E	2W 470	1	
R7845	D0YBR0000002	1/16W 0	1	
R7846	D0GB562JA002	1/10W 5.6K	1	
TU7801	ENGF7501GF	TUNER	1	
W501	D0YBR0000002	1/16W 0	1	
W502	D0YDR0000006	1/16W 0	1	
W503	D0YBR0000002	1/16W 0	1	
W504	D0YBR0000002	1/16W 0	1	
W505	D0YDR0000006	1/16W 0	1	
W506	D0YBR0000002	1/16W 0	1	
W507	D0YBR0000002	1/16W 0	1	
W508	D0YDR0000006	1/16W 0	1	
W509	D0YBR0000002	1/16W 0	1	
W510	D0YBR0000002	1/16W 0	1	
W511	D0YDR0000006	1/16W 0	1	
W512	D0YDR0000006	1/16W 0	1	
W513	D0YDR0000006	1/16W 0	1	
W514	D0YDR0000006	1/16W 0	1	
W515	D0YDR0000006	1/16W 0	1	
W516	D0YBR0000002	1/16W 0	1	
W517	D0YBR0000002	1/16W 0	1	
W518	D0YDR0000006	1/16W 0	1	
W519	D0YBR0000002	1/16W 0	1	
W520	D0YBR0000002	1/16W 0	1	
W521	D0YBR0000002	1/16W 0	1	
W522	D0YDR0000006	1/16W 0	1	
W523	D0YBR0000002	1/16W 0	1	
W524	D0YDR0000006	1/16W 0	1	
W525	D0YDR0000006	1/16W 0	1	
W526	D0YDR0000006	1/16W 0	1	
W527	D0YDR0000006	1/16W 0	1	
W528	D0YDR0000006	1/16W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W529	D0YBR0000002	1/16W 0	1	
W530	D0YDR0000006	1/16W 0	1	
W531	D0YBR0000002	1/16W 0	1	
W532	D0YBR0000002	1/16W 0	1	
W533	D0YBR0000002	1/16W 0	1	
W534	D0YBR0000002	1/16W 0	1	
W535	D0YBR0000002	1/16W 0	1	
W536	ERJ8GEY0R00V	1/4W 0	1	
W537	D0YBR0000002	1/16W 0	1	
W538	D0YDR0000006	1/16W 0	1	
W539	D0YDR0000006	1/16W 0	1	
W540	D0YBR0000002	1/16W 0	1	
W541	D0YBR0000002	1/16W 0	1	
W542	D0YDR0000006	1/16W 0	1	
W543	D0YDR0000006	1/16W 0	1	
W544	D0YDR0000006	1/16W 0	1	
W545	D0YDR0000006	1/16W 0	1	
W546	D0YDR0000006	1/16W 0	1	
W547	D0YBR0000002	1/16W 0	1	
W548	D0YBR0000002	1/16W 0	1	
W549	D0YBR0000002	1/16W 0	1	
W550	ERJ8GEY0R00V	1/4W 0	1	
■	05	VEP01961A	1	(POWER SUPPLY P.C.B.)
C1120	ECQU2A223MLC	0.022U	1	⚠
C1121	ECQU2A683MLC	100V 0.068U	1	
C1122	F1B2G1020002	400V 1000P	1	
C1123	F1B2G1020002	400V 1000P	1	
C1125	F1B2G1020002	400V 1000P	1	
C1143	ECEC2GG680FZ	400V 68U	1	
C1150	EEUFM1V680B	35V 68U	1	
C1151	F1B3D102A011	2V 1000P	1	
C1152	ECJ2VC1H331J	50V 330P	1	
C1153	ECJ2VB1H222K	50V 2200P	1	
C1154	ECJ2VB1H102K	50V 1000P	1	
C1200	F1J1E104A081	25V 0.1U	1	
C1201	ECJ2VB1E473K	25V 0.047U	1	
C1270	F2A1C182A621	16V 1800U	1	
C1271	F2A1C182A621	16V 1800U	1	
C1272	F2A1C102A625	16V 1000U	1	
C1273	EEUFM1C121B	16V 120U	1	
C1274	F1J1E104A081	25V 0.1U	1	
C1400	EEUFM1E221B	25V 220U	1	
C1401	F1J1C1050030	16V 1U	1	
C1402	ECJ2VB1E103K	25V 0.01U	1	
C1403	ECJ2VC1H391J	50V 390P	1	
C1404	ECJ2VB1H472K	50V 4700P	1	
C1405	ECJ2VB1H102K	50V 1000P	1	
C1406	F2A0J681A550	6.3V 680U	1	
C1407	EEUFM1E221B	25V 220U	1	
C1408	F1J1E104A081	25V 0.1U	1	
C1409	F1J1E104A081	25V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1410	F1J1H2230005	50V 0.022U	1	
C1411	ECJ2VC1H181J	50V 180P	1	
C1412	ECJ2VB1E103K	25V 0.01U	1	
C1413	F2A1A4710038	10V 470U	1	
C1421	F1J1E104A081	25V 0.1U	1	
C1513	F2A1A4710038	10V 470U	1	
C1514	ECJ2VB1E103K	25V 0.01U	1	
C1601	EEUFM1E221B	25V 220U	1	
C1602	F1J1E104A081	25V 0.1U	1	
C1603	F1J1E104A081	25V 0.1U	1	
C1604	F1J1E104A081	25V 0.1U	1	
C1605	ECJ2VC1H181J	50V 180P	1	
C1606	ECJ2VB1E103K	25V 0.01U	1	
C1607	F2A1A681A539	10V 680U	1	
C1608	F1J1E104A081	25V 0.1U	1	
C1701	EEUFM1E221B	25V 220U	1	
C1702	F1H1C104A042	16V 0.1U	1	
C1703	F1H1C104A042	16V 0.1U	1	
C1704	F1H1H1030006	50V 0.01U	1	
C1705	ECJ1VC1H121J	50V 120P	1	
C1706	F1H1H1030006	50V 0.01U	1	
C1707	F2A0J681A550	6.3V 680U	1	
C1800	F2A1E4700048	25V 47U	1	
D1140	B0EDKT000009	DIODE	1	
D1151	B0HAGM000006	DIODE	1	
D1152	MAZ4100NMF	DIODE	1	
D1155	MAZ73000BC	DIODE	1	
D1156	MA2C165001VT	DIODE	1	
D1157	B0HADV000001	DIODE	1	
D1270	B0JBSG000010	DIODE	1	
D1400	B0JCPE000015	DIODE	1	
D1401	B0JCPD000021	DIODE	1	
D1601	B0JCPD000021	DIODE	1	
D1701	B0JCPE000015	DIODE	1	
D1800	MA2J11100L	DIODE	1	
F1101	K5D202BK0005	FUSE	1	⚠
IC1150	C0DACZH00017	IC	1	
IC1200	C0DAEMB00003	IC	1	
IC1400	C0DAAJG00007	IC	1	
IC1401	C0DBAKG00005	IC	1	
IC1501	C0EBJ0000143	IC	1	
IC1601	C0DBAKG00007	IC	1	
IC1701	C0DBAKG00005	IC	1	
IP1401	K5H3022A0013	IC PROTECTOR	1	⚠
IP1601	K5H3022A0013	IC PROTECTOR	1	⚠
L1120	G0B233D00001	COIL	1	
L1121	G0B233D00001	COIL	1	
L1270	G0A100H00025	COIL 10UH	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L1400	G0A100HA0023	COIL 10UH	1	
L1401	G0A330ZA0041	COIL 33UH	1	
L1402	G0A150ZA0041	COIL 15UH	1	
L1503	G0A100HA0023	COIL 10UH	1	
L1601	G0A150ZA0041	COIL 15UH	1	
L1701	G0A220ZA0041	COIL 22UH	1	
LB1400	J0JHC0000048	FILTER	1	
LB1600	J0JHC0000048	FILTER	1	
LB1700	J0JHC0000048	FILTER	1	
P1101	K2AA2H000007	AC INLET	1	⚠
P1102	K1KB23A00004	CONNECTOR(23P)	1	
P1103	K1KA04AA0180	CONNECTOR(4P)	1	
Q1200	B3PBA0000237	TRANSISTOR	1	
Q1270	B1DHED000008	TRANSISTOR	1	
Q1400	B1DHDD000022	TRANSISTOR	1	
Q1600	B1DHDD000022	TRANSISTOR	1	
Q1700	B1DDCC000009	TRANSISTOR	1	
QR1301	UNR221300L	TRANSISTOR	1	
QR1302	UNR221300L	TRANSISTOR	1	
QR1303	UNR221300L	TRANSISTOR	1	
QR1304	UNR221300L	TRANSISTOR	1	
QR1800	UNR211300L	TRANSISTOR	1	
QR1801	UNR221300L	TRANSISTOR	1	
R1150	ERJ6GEYJ180V	1/8W 18	1	
R1151	ERJ6GEYJ682V	1/8W 6.8K	1	
R1152	ERJ6GEYJ103V	1/8W 10K	1	
R1153	ERJ6GEYJ180V	1/8W 18	1	
R1154	ERJ6GEYG912V	1/8W 9.1K	1	
R1155	ERJ6GEYG471V	1/8W 470	1	
R1156	ERJ6GEYG163V	1/8W 16K	1	
R1157	ERJ6GEYG511V	1/8W 510	1	
R1158	ERX2SJR22E	2W 22	1	
R1200	ERJ6GEYG122V	1/8W 1.2K	1	
R1201	ERJ6GEYG822V	1/8W 8.2K	1	
R1205	ERJ6GEYJ224V	1/8W 220K	1	
R1206	ERJ6GEYG242V	1/8W 2.4K	1	
R1207	ERJ6GEYJ103V	1/8W 10K	1	
R1208	ERJ6GEYJ222V	1/8W 2.2K	1	
R1209	ERJ6GEYJ102V	1/8W 1K	1	
R1210	ERJ6GEYJ102V	1/8W 1K	1	
R1270	ERJ6GEYJ472V	1/8W 4.7K	1	
R1271	ERJ6GEYJ472V	1/8W 4.7K	1	
R1311	ERJ6GEYJ472V	1/8W 4.7K	1	
R1401	ERJ6GEYJ104V	1/8W 100K	1	
R1402	ERJ6RBD821V	1/10W 820	1	
R1404	ERJ6RBD102V	1/10W 1K	1	
R1405	ERJ6GEYJ513V	1/8W 51K	1	
R1406	D1BFR0270001	1/2W 0.027	1	
R1407	ERJ6RBD272V	1/10W 2.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1409	ERJ6RBD472V	1/10W 4.7K	1	
R1410	ERJ6RBD151V	1/10W 150	1	
R1411	ERJ6RBD123V	1/10W 12K	1	
R1518	ERJ6GEYJ103V	1/8W 10K	1	
R1601	D1BFR0150001	1/2W 0.015	1	
R1602	ERJ6GEYJ513V	1/8W 51K	1	
R1603	ERJ6RBD242V	1/10W 2.4K	1	
R1604	ERJ6RBD153V	1/10W 15K	1	
R1605	ERJ6RBD272V	1/10W 2.7K	1	
R1701	D1BFR047A010	1/2W 0.047	1	
R1702	D0GB333JA002	1/10W 33K	1	
R1703	D0YBR0000002	1/16W 0	1	
R1704	ERJ3RBD103V	1/16W 10K	1	
R1705	ERJ3RBD472V	1/16W 4.7K	1	
R1800	ERJ6GEYJ471V	1/8W 470	1	
R1801	ERJ6GEYJ104V	1/8W 100K	1	
R1802	ERJ6GEYJ472V	1/8W 4.7K	1	
R1803	ERJ6GEYJ103V	1/8W 10K	1	
T1150	ETS29AZ2G6AC	TRANSFORMER	1	⚠
VA1110	ERZVA5V471	SURGE ABSORBER	1	
ZA1103	EYF52BCY	FUSE HOLDER	1	
ZA1104	EYF52BCY	FUSE HOLDER	1	
■	06	VEP70115A	1	(FRONT(L)P.C.B.)
P7001	K1KA03AA0301	CONNECTOR(3P)	1	
S7001	EVQPC105K	SWITCH	1	
■	07	VEP70116C	1	(LED P.C.B.)
C7101	F1H1H1030006	50V 0.01U	1	
C7102	F1H1H1030006	50V 0.01U	1	
D7101	B3ABA0000595	DIODE	1	
D7102	B3ACA0000265	DIODE	1	
D7107	B3AEA0000068	DIODE	1	
D7108	B3AEA0000068	DIODE	1	
P7101	K1KB06B00024	CONNECTOR(6P)	1	
Q7101	2SD0601ARN	TRANSISTOR	1	
Q7102	2SD0601ARN	TRANSISTOR	1	
Q7103	2SD0601ARN	TRANSISTOR	1	
Q7104	2SD0601ARN	TRANSISTOR	1	
R7101	D0GB103JA002	1/10W 10K	1	
R7102	D0GB103JA002	1/10W 10K	1	
R7103	ERJ6GEYJ201V	1/8W 200	1	
R7104	ERJ6GEYJ201V	1/8W 200	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7105	ERJ6GEYJ201V	1/8W 200	1	
R7106	ERJ6GEYJ151V	1/8W 150	1	
R7108	D0GB473JA002	1/10W 47K	1	
R7110	D0GB473JA002	1/10W 47K	1	
R7112	D0GB473JA002	1/10W 47K	1	
R7114	D0GB473JA002	1/10W 47K	1	
■	08	VEP73121E	1	(SD CARD P.C.B.)
C6801	F1H1H1030006	50V 0.01U	1	
C6802	F1J0J106A014	6.3V 10U	1	
C6803	F1J0J106A014	6.3V 10U	1	
FL6801	F1H0J1050025	FILTER	1	
LB6801	J0JHC0000032	COIL	1	
LB6802	J0JHC0000045	COIL	1	
P6802	K1KB14A00073	CONNECTOR(14P)	1	
P6803	K1NA09E00027	CONNECTOR(9P)	1	
R6801	D0GB101JA002	1/10W 100	1	
R6802	D0GB220JA002	1/10W 22	1	
R6803	D0GB220JA002	1/10W 22	1	
R6804	D0GB223JA002	1/10W 22K	1	
R6805	D0GB123JA002	1/10W 12K	1	
R6807	D0GB223JA002	1/10W 22K	1	
RX6801	D1H82204A024	RESISTOR-RESISTOR	1	
RX6802	D1H81234A024	RESISTOR-RESISTOR	1	
■	09	VEP73133A	1	(DV JACK P.C.B.)
P37001	K1KA06B00181	CONNECTOR(6P)	1	
P37002	K2HZ104B0012	CONNECTOR(104P)	1	

22. Schematic Diagram for printing with A4

:REC SIGNAL :PB SIGNAL

FROM TIMER SECTION — XTMUTE IC7501- 63
FROM DIGITAL P.C.B. — XDMUTE IC4408- 4
QR4002-QR4005 Q4004 MUTE CIRCUIT
D4005 Q4006 MUTE
Q4007 MUTE
D4006 Q4009 MUTE
Q4008 MUTE

JK3001 REAR JACK
MIX L OUT2 → 7 LINE OUT (L)
MIX R OUT2 → 6 LINE OUT (R)
5
AV4

IC3001 (AUDIO SIGNAL PROCESSOR)

IC4009 (BUFFER)

FROM DIGITAL P.C.B. (DIGITAL AUDIO BLOCK SECTION)
P9001 P7402 41 — MIX R OUT DM
P9001 P7402 39 — MIX L OUT DM

DAC Rch 56
DAC Lch 64

JK3901 21 PIN JACK
AV1 (TV): AUDIO IN ch2(R) 2, AUDIO IN ch1(L) 6
AV2 (DECODER/EXT): AUDIO IN ch2(R) 2, AUDIO IN ch1(L) 6
AV1 Rch 62
AV1 Lch 60
AV2 Rch 63
AV2 Lch 61

4.5V, Max 5.6Vpp
AUDIO SIGNAL

JK3002 FRONT INPUT JACK
AV3 (FRONT) AUDIO: LINE (Rch) 3, 2; LINE (Lch/MONO) 1, 5; 4
AV3 Rch 50
AV3 Lch 68

JK3001 REAR INPUT JACK
AV4 (REAR) AUDIO: LINE (Rch) 2, 3; LINE (Lch) 1
AV4 Rch 51
AV4 Lch 59

TU7801 U/V TUNER
AUDIO OUT 14 → PS7801 PP7401 PK7701 PK7301 5 3
SIF OUT 15 → PS7801 PP7401 PK7701 PK7301 4 1
TUNER P.C.B.

IC7301 (NICAM/A2)
MONO IN 43, R OUT 2 → PK7302 PK7702 4
SIF 25, L OUT 1 → PK7302 PK7702 6
NICAM DECODER P.C.B.

TUN Rch 54
TUN Lch 52

(SA5R) AV4 / TUN → BUFF.
(SA5L) AV4 / TUN → BUFF.

(SA1R) → LPF → BUFF. → MUTE → AV1 Rch 72 → AUDIO OUT Ch2(R), AUDIO OUT Ch1(L)
(SA3R) → OUTPUT SELECT SWITCH (SA4R) → AGC → ADC Rch AMP → ADC Rch 79
(SA2R) → LPF → BUFF. → MUTE → AV2 Rch 74 → AUDIO OUT Ch2(R), AUDIO OUT Ch1(L)
(SA2L) → LPF → BUFF. → MUTE → AV2 Lch 73
(SA3L) → OUTPUT SELECT SWITCH (SA4L) → AGC → ADC Lch AMP → ADC Lch 78
(SA1L) → LPF → BUFF. → MUTE → AV1 Lch 71

JK3901 21 PIN JACK
AUDIO OUT Ch2(R) → 1 AV1 (TV) 3 ← AUDIO OUT Ch1(L)
AUDIO OUT Ch2(R) → 1 AV2 (DECEODER/EXT) 3 ← AUDIO OUT Ch1(L)

AADC R → P7402 P9001 31
AADC L → P7402 P9001 29
TO DIGITAL P.C.B. (DIGITAL AUDIO BLOCK SECTION)

IIC BUS LOGIC
SCL 80, SDA 80
IIC CLK IC7501- 28
IIC DATA IC7501- 29
FROM TIMER SECTION
5V, 2.3V, 1.0V

RF OUT 76 → MUTE → VCA → MIX

FROM DIGITAL P.C.B. — P9001 P7402 36 — IEC OUT

JK3903 OPTICAL (DIGITAL AUDIO OUT) 7

DMR-EH60EG
Analog Audio Block Diagram

:REC SIGNAL :PB SIGNAL

MAIN P.C.B.

IC3001
(VIDEO PROCESSOR)

FROM DIGITAL P.C.B. (DIGITAL VIDEO BLOCK SECTION)

P9001 P7402 51 C OUT DM
P9001 P7402 47 Y OUT DM
P9001 P7402 55 RPROUT DM
P9001 P7402 59 GPYOUT DM
P9001 P7402 63 BPBOUT DM

JK3901 21 PIN JACK
AV1 (TV) 20 AV1 VIDEO

AV3
JK3002 FRONT JACK
S-VIDEO IN 11 AV3 Y, 12 AV3 C
VIDEO IN 7 AV3 V, 6

AV4
JK3001 REAR JACK
VIDEO IN 4 AV4 V, 1

AV4
JK3003 S-VIDEO
S-VIDEO IN 3 AV4 Y, 4 AV4 C

JK3901 21 PIN JACK
AV2 (DECODER/EXT)
RED/C 15 AV2 R/C
GREEN 11 AV2 G
BLUE 7 AV2 B
VIDEO/Y 20 AV2 V/Y

RGB CPS V, B, G, R

AV1 (TV) 33 AV1 V CLAMP
AV3 Y 41 CLAMP
AV3 C 45 BIAS
AV3 V 37 CLAMP
AV4 V 35 CLAMP
AV4 Y 39 CLAMP
AV4 C 43 BIAS
AV2 R/C 1 BIAS, CLAMP (SW10)
AV2 G 3 CLAMP
AV2 B 5 CLAMP
AV2 V/Y 31 CLAMP
91 BIAS 6MHz BPF
93 CLAMP 6MHz LPF
95 CLAMP/BIAS
97 CLAMP
99 CLAMP/BIAS

6MHz / 12MHz (SW1) → (SW2) → COMP R-Y OUT 7
(SW3) → AV1 R-C OUT 9
(SW4) → COMP B-Y OUT 11
AV1 B OUT 12
(SW5) → (SW6) → COMP Y OUT 14, 15
AV1 G OUT 17
(SW7) → AV4 Y OUT 19, 20
(SW8) → AV4 C OUT 22
(SW9) → AV4 V OUT 23, 24
SV1 → AV1 V/Y/C OUT 26
SV2 → AV2 V OUT 28
C-ADC OUT 81
V/Y ADC OUT 83
SLICER 85 — SLICER Q7501,Q7503- (B)
TUNER V 30 — CLAMP

ADC OUTPUT SELECT SWITCH CIRCUIT
AV1 V, AV3 Y, AV3 C, AV3 V, AV4 V, AV4 Y, AV4 C, AV2 R/C, AV2 V/Y, TUNER V

IIC BUS LOGIC
SCL 88 — IIC CLK IC7501- 28
SDA 89 — IIC DATA IC7501- 29
FROM/TO TIMER SECTION

JK3903
2 PR, 3 PB, 4 Y, 1
COMPONENT VIDEO OUT (PROGRESSIVE/ INTERLACE)

JK3801 21PIN JACK
15 RED/C, 7 BLUE, 11 GREEN, 19 VIDEO/Y
AV1 (TV)

JK3003 S-VIDEO
9 Y, 10 C
AV4

JK3001 VIDEO OUT
8, 5
AV4

JK3901 21PIN JACK
19 VIDEO
AV2 (DECODER/EXT)

CPN CIN DM — P7402 P9001 87
V/Y IN DM — P7402 P9001 83
R — P7402 P9001 67
G — P7402 P9001 71
B — P7402 P9001 75
RGB CPS V — P7402 P9001 79
TO DIGITAL P.C.B. (DIGITAL VIDEO BLOCK SECTION)

TUNER P.C.B.
PP7401 PS7801 2
K7809
TU7801 U/V TUNER
18 VIDEO OUT

2.3V, 5V, 1.0V

AV2 R/G/B

DMR-EH60EG
Analog Video Block Diagram

POWER P.C.B.

MAIN P.C.B.

AC INLET
P1101

F1101
250V2A

VA1110,L1120,L1121
SURGE SUPPRESSOR AND SURGE ABSORBER

D1140,C1143
RECTIFIER

T1150
POWER SWITCHING TRANSFORMER

P1
P2
V2
V1
S2D
S2C
S2B
S2A
S1A
S1B
S1C
S1D

D1270

X SW+12.4V

IC1150
(SWITCHING IC)
VIN
F/B
Z/C
GND
VCC

IC1400
(DC/DC CONVERTER)
VIN
VOUT
ON/OFF
GND
D+1.5V

QR1301
(POWER ON Ⓗ:ON)

Q1700
(REG.X SW+3.8V)

IC1701
(DC/DC CONVERTER)
Vin
Current Sense
FET Gate Drive
PW ON
GND

X SW+12.4V

Q1600
(REG.X SW+5.8V)

IC1601
(DC/DC CONVERTER)

IP1601

QR1800,QR1801
SWITCHING

Q1400
(REG.DR+5V)

IC1401
(DC/DC CONVERTER)

IP1401

QR1303
(POWER ON/OFF CONTROL SW.)

QR1302
(Ⓗ:ON)

Q1200
(FEED BACK)

IC1200
(ERROR VOLTAGE DET.)

Q1270
(DR+12V OUT)

QR1304
(Ⓗ:ON)

IC1501
(HDD PFAIL Ⓛ OUT)
VCC
VOUT
Vref

D+1.5V — P1102 P1501 12,13 — A
POWER ON Ⓗ — P1102 P1501 11 — B
X SW+3.8V — P1102 P1501 14 — C
X SW+5.8V — P1102 P1501 2,3 — D
HDD PFAIL Ⓛ — P1102 P1501 22 — HDD PFAIL Ⓛ IC7501- 47 — TO TIMER SECTION
DR P ON Ⓗ — P1102 P1501 15 — DR P ON Ⓗ IC7501- 49 — FROM TIMER SECTION
DR+12V — P1103 1
DR+5V — P1103 4 — TO HDD
DR+5V — P1102 P1501 20,21
DR+12V — P1102 P1501 16,17 — TO DVD-RAM/R DRIVE
X SW+12.4V — P1102 P1501 4,5 — IP1501 — E

HOT

COLD

DMR-EH60EG
Power Supply Block Diagram

MAIN P.C.B.

DIGITAL P.C.B.

Ⓐ D+1.5V

Ⓑ POWER ON Ⓗ

Ⓒ X SW+3.8V

IC1501
(REG.ANA+5V)
8 VIN VOUT 1
GND CONT
3 5
ANA+5V

IC4011
(REG.AU+5V)
4 VIN VOUT 5
GND Ⓗ:ON
2 3
AU+5V

Ⓓ

IC1511
(REG.X SW+5.2V)
5 CONT VOUT 1
8 VIN GND 3
X SW+5.2V

X SW+5.8V

IC7505
(RESET)
2 VDD OUT 1
P FAIL Ⓛ
IC7501- 80

D7509
2 1
3 4
IC7501- 34 / 69 / 106 / 108 / 112
IC7503- 8 ,IC7504- 8 / 18

IC7502
(RESET)
5 VDD OUT 4
RESET Ⓛ
IC7501- 11

IC7402
(REG.BOOSTER+5V)
1 VIN
3 Ⓗ:ON VOUT 6
GND GND
2 5
BOOSTER+5V
IC3001- 42 / 84 / 94

IC7403
(REG.PS+5V)
8 VIN VOUT 1
GND CONT
3 5
PS+5V
IC3001- 6 / 8 / 25 / 40

IP7501
1 2
X SW+12.4V

T7501
DISPLAY HEATER
POWER SWITCHING
TRANSFORMER
1 7
D7506

IC7401
(REG.PS+11.6V)
1 VIN VOUT 3
Ⓗ:ON GND
2 5
PS+11.6V
IC3001- 46 ,IC4009- 8 ,IC4012- 8

PWR SAVE Ⓗ:ON
IC7501- 78
FROM TIMER SECTION

QR7401
(Ⓗ:ON)

IC1510
(REG.+5V)
1 VIN VOUT 3
GND Ⓗ:ON
5 2
JC REG.+5V

JC P ON Ⓗ
IC7501- 50
FROM TIMER SECTION

Ⓔ

IC1504
(REG.D+3.3V)
2 VCONT
1 VIN GND VOUT 3
5

IC7506
(RESET)
2 VDD OUT 1
Ⓗ:ON
QR7506
(INV.SW.)
SYS PFAIL Ⓗ
IC7501- 81

D+3.3V
RESET +5.2V
IC7501- 1

IC1505
(REG.X SW+3.3V)
5 CONT VOUT 1
8 VIN GND 3
X SW+3.3V
IC7501- 15

IC1502
(REG.ANA+3.3V)
8 VIN VOUT 1
GND CONT
3 5
ANA+3.3V

DI P ON Ⓗ
IC7501- 51
FROM TIMER SECTION

IC9001
(REG.D+1.2V)
8 VIN
5 CONT VOUT 1
GND
3
D+1.2V
IC3201- 208 ~ 234

P7402 P9001
82,84,86,88

P7402 P9001
76
D+1.5V
IC37001- 4 / 46 / 67 / 95 / 105 / 123 / 155

P7402 P9001
48,52
ANA+5V
IC3206- 6 / 18 / 26 / 93

IC4409
(REG.DAC+3.3V)
P7402 P9001
17
1 VIN
3 Ⓗ:ON VOUT 6
GND GND
2 5
DAC+3.3V
IC4406- 7 (VDD)

AU+5V
IC4404- 11 ,IC4405- 8 ,IC4406- 6

P7402 P9001
68,70,72,74
D+3.3V
IC3201,IC3206,IC3207,IC3208,
IC4007,IC4008,IC6001,IC6003,
IC6010,IC6011,IC6701,IC37001,
IC37002,IC37005
(D+3.3V)

IC6008
(REG.D+2.5V)
1 VIN VOUT 3
2 VB GND 5
D+2.5V
IC3201,IC6006,IC6007
(D+2.5V)

IC6005
(RESET)
5 VDD VOUT 4
X RESET OUT

P7402 P9001
38,42
ANA+3.3V
IC3201,IC3202,IC3206,IC37001
(ANA+3.3V)

TUNER P.C.B.

TU7801
U/V TUNER

PP7401 PS7801
17
1 BOOSTER+B

PP7401 PS7801
10
K7810
7 5V(TUNER)

PP7401 PS7801
3
16 BTL+30V
17 5V(VIF)

NICAM DECODER P.C.B.

PK7701 PK7301
7
IC7301- 28

DMR-EH60EG
Power Supply Block Diagram

DMR-EH60EG
Power Supply Block Diagram

MAIN P.C.B.

IR7501
REMOTE CONTROL RECEIVER
VDD GND CTL
3 2 1

IC7501
(TIMER)

IR → 2 REMOTE CTL.

IC7506
(RESET)
D+3.3V → 2 VDD OUT 1
QR7506 (H:ON) → 81 SYS PFAIL H

IC7505
(RESET)
X SW+5.2V → 2 VDD OUT 1 → 80 PFAIL L

S7504 OPEN/CLOSE → KEY IN1 → 101 KEY IN1

S7506 STOP
S7508 REC
S7502 CH-DOWN
→ KEY IN2 → 102 KEY IN2

S7501 EXT LINK
S7505 SELECT
S7507 PLAY
S7503 CH-UP
→ KEY IN3 → 104 KEY IN3

S7001 POWER → P7001 P7506 3

FRONT(L) P.C.B.

X SW+5.2V

SD
D7104 (AQUA)
Q7104 (SD LED DRIVE)
P7101 P7507 1 → 85 SD LED H

HDD SEL
D7103 (BLUE)
Q7103 (HDD SEL LED DRIVE)
P7101 P7507 2 → 86 HDD SEL LED H

DVD SEL
D7102 (AMBER)
Q7102 (DVD SEL LED DRIVE)
P7101 P7507 3 → 87 DVD SEL LED H

SD SEL
D7101 (GREEN)
Q7101 (SD SEL LED DRIVE)
P7101 P7507 4 → 88 SD SEL LED H

LED P.C.B.

POWER SAVE H 78
P SAVE H
QR7508 (H:ON)
Q7510 (L:OFF)
PWR SAVE H
QR7401- B
→ TO POWER SUPPLY SECTION

IC7502
(RESET)
RESET L 11 ← 4 VDD 5 ← X SW+5.2V

FL TXD 4
FL RXD 5
FL CLK 6
FL RESET L 93
FL CS 94

IC7504
(DISPLAY DRIVE)
8 VCC1
18 VCC2
4 S DATA
3 SCK
1 RESET
2 CS
5 VSS
VP 64
SEG00 44 ~ SEG25 19
SEG26 17 ~ SEG35 45 ~ SEG39 49
DIG00 63 ~ DIG07 56

T7501
DISPLAY HEATER POWER SWITCHING TRANSFORMER
HEATER+ 9
+B 1
HEATER- 8
+38V 7
GND 6
-33V 5
D7506 → UNREG.+38V → PP7401 PS7801 3 → TO U/V TUNER (16 BTL+30V)
D7505

IP7501
(IC PROTECTOR)
X SW+12.4V → 1 2

DP7501
1 F+
47 F-
13 P1 ~ 44 P32
4 1G
5 2G
7 3G
12 8G
TIMER DISPLAY

IIC CLK 28
IIC DATA 29

IC7503
(EEPROM)
6 SCL
5 SDA

<EEP ROM information>
1.Country & Language
2.Tuner preset
3.Timer REC info.
4.ROM Correction info.

IC7301
(NICAM/A2)
PK7702 PK7302 1 → 29 SCL
PK7702 PK7302 2 → 30 SDA

XCIN 9
X7502 32.768KHz
XCOUT 10

XOUT 12
X7501 10MHz
XIN 14

IC3001
(A/V PROCESSOR)
98 SCL
99 SDA

TU7801
U/V TUNER
PP7401 PS7801 7 → 12 SDA
PP7401 PS7801 8 → 11 SCL

XTMUTE 63 → XT MUTE QR4002- B
SYNC IN 109 ← Q7503 BUFFER ← SLICER VIDEO IC3001- 85
CVIN1 113 ← Q7501 BUFFER
→ TO/FROM ANALOG A/V SECTION

DR POWER ON H 49 → DR P ON H P1501- 15
DI POWER ON H 51 → DIP ON H P1501- 11
JC POWER ON H 50 → JC P ON H IC1510- 2
→ TO POWER SUPPLY SECTION

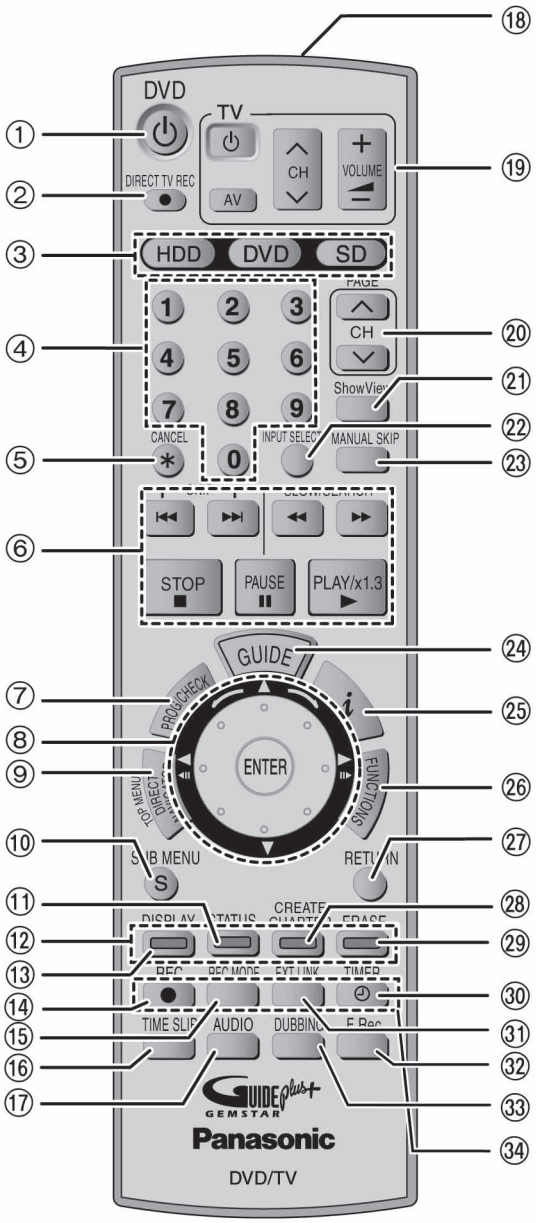
TBUS CLK 44 → G SCLK A → SCLK P7402- 6
TBUS TXD 42 → G SBPTM A → SBPTM P7402- 10
TBUS RXD 43 ← G SBMTP A ← SBMTP P7402- 12
EPG ON H 45 → EPG ON H P7402- 28
→ TO/FROM DIGITAL P.C.B.

IC7507
(FAN MOTOR DRIVE)
X SW+12.4V
FAN PWM OUT 23
Q7511 (FAN MOTOR DRIVE)
FANDCOUT
FAN MOTOR M
P7504 1
P7504 3
FAN LOCK H 62

DMR-EH60EG
Timer Block Diagram

Remote control

Instructions for operations are generally described using the remote control.



① Turn the unit on
② Direct TV recording
③ Select drive (HDD, DVD or SD)
④ Select channels and title numbers, etc./Enter numbers
⑤ Cancel
⑥ Basic operations for recording and play
⑦ Show timer recording programme screen
⑧ Smart Wheel (➡ below)
⑨ Show Top menu/Direct Navigator
⑩ Show sub menu
⑪ Show status messages
⑫ Colour buttons for switching between Video/Picture and Video/Playlists, selecting character type when entering text, manual tuning settings and GUIDE Plus+ operations※
⑬ Show on-screen menu
⑭ Start recording
⑮ Change recording mode
⑯ Skip the specified time/Display the television image as a picture-in-picture
⑰ Select audio
⑱ Transmission window
⑲ Television operations
⑳ Channel select/Change pages in the GUIDE Plus+ system※
㉑ Show SHOWVIEW screen
㉒ Input select (AV1, AV2, AV3, AV4 or DV)
㉓ Skip 30 seconds forward
㉔ Show the GUIDE Plus+ screen
㉕ Show programme information in the GUIDE Plus+ system※
㉖ Show FUNCTIONS window
㉗ Return to previous screen
㉘ Create chapter
㉙ Erase items
㉚ Timer recording standby/release
㉛ Linked timer recordings with external equipment
㉜ Flexible Recording
㉝ One touch transfer (dubbing)
㉞ Recording functions

※Refer to the “User’s manual for the GUIDE Plus+ system” for more information.

Note

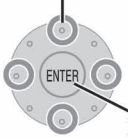
- Buttons such as the [● REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- If you press [EXT LINK] accidentally, the unit turns off and switches to recording standby mode. Press [EXT LINK] again to cancel recording standby.
- The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”
- You can use this remote control to operate your television if you set the television manufacturer code.

■ Smart Wheel operation

●Select items on menu screens and set items.

Press [▲, ▼, ◄, ►] (up, down, left or right) to select an item.

You can also turn the wheel to select an item.



Press [ENTER] to confirm.

These operations are also possible…..

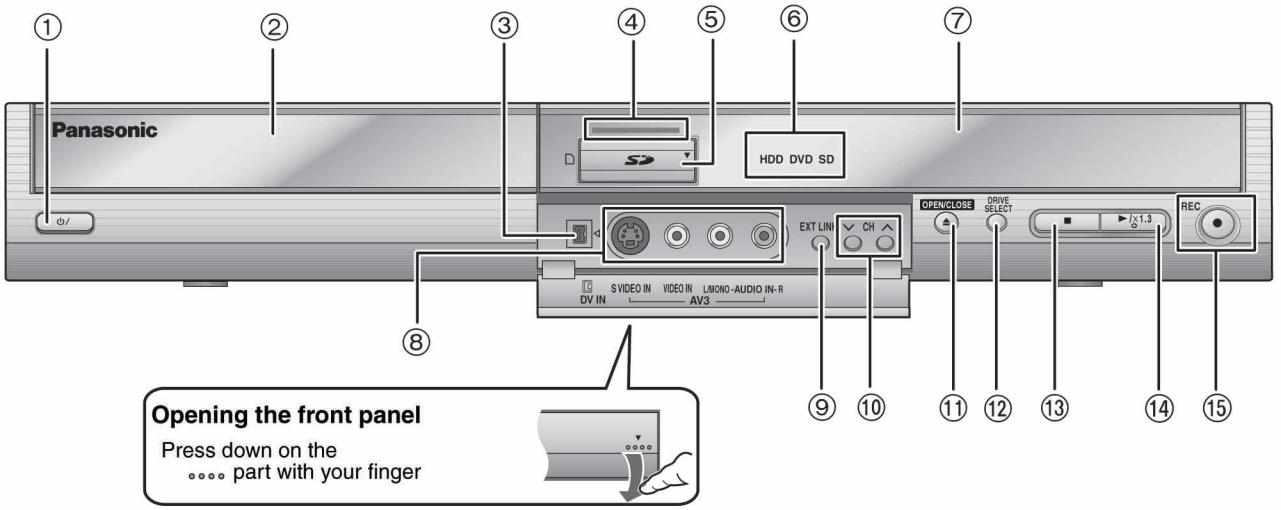
- **Frame-by-frame (backward/forward/):**
  While paused, press [◄❚❚] or [❚❚►] (left/right)
- **Search (forward/backward):**
  During play, turn right or turn left
- **Slow-motion (forward/:backward):**
  While paused, turn right or turn left

Note

Press the Smart Wheel lightly when turning it.

If you press it strongly when turning it, [▲, ▼, ◄, ►] may be mistakenly activated.

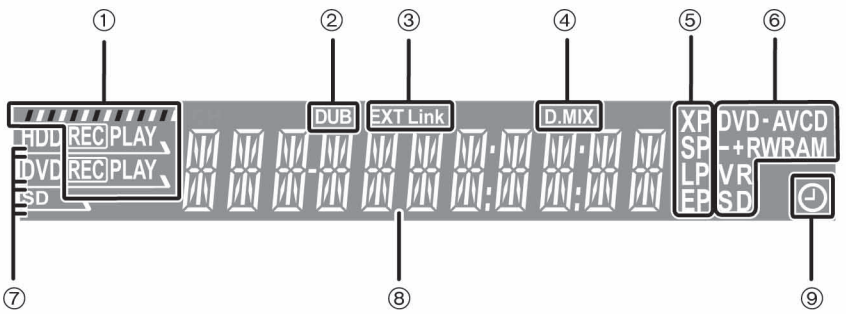
Main unit



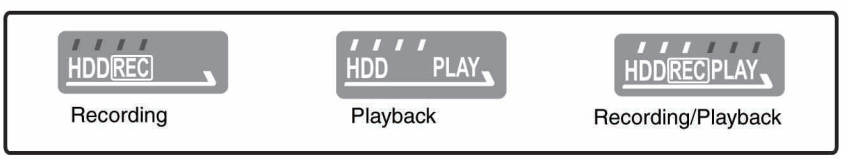
① **Standby/on switch (⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray
③ Connection for digital video (DV) camcorder
④ Lights when “FL Display” is set to “Bright”
⑤ SD card slot
⑥ Lights when the HDD, DVD or SD drive is selected
⑦ Display (➡ below)
⑧ Connection for camcorder etc.
⑨ Linked timer recordings with external equipment
⑩ Channel select
⑪ Open/close disc tray
⑫ Select drive
Drive changes each time you press [DRIVE SELECT].
⑬ Stop
⑭ Start play
⑮ Start recording/Remote control signal sensor
Specify a time to stop recording

Rear panel terminals

The unit’s display

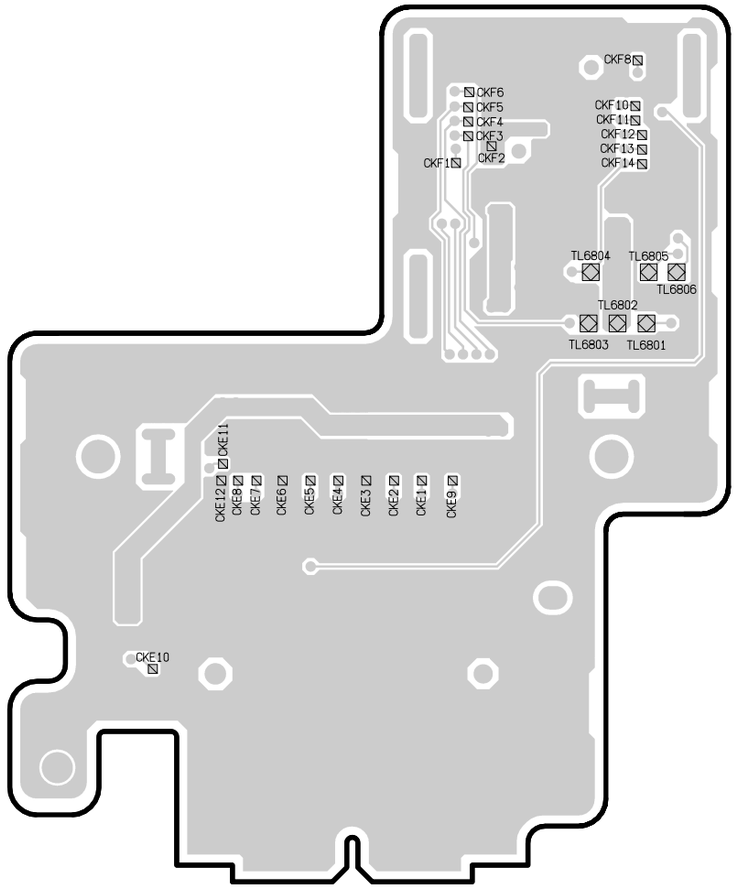


① e.g., HDD



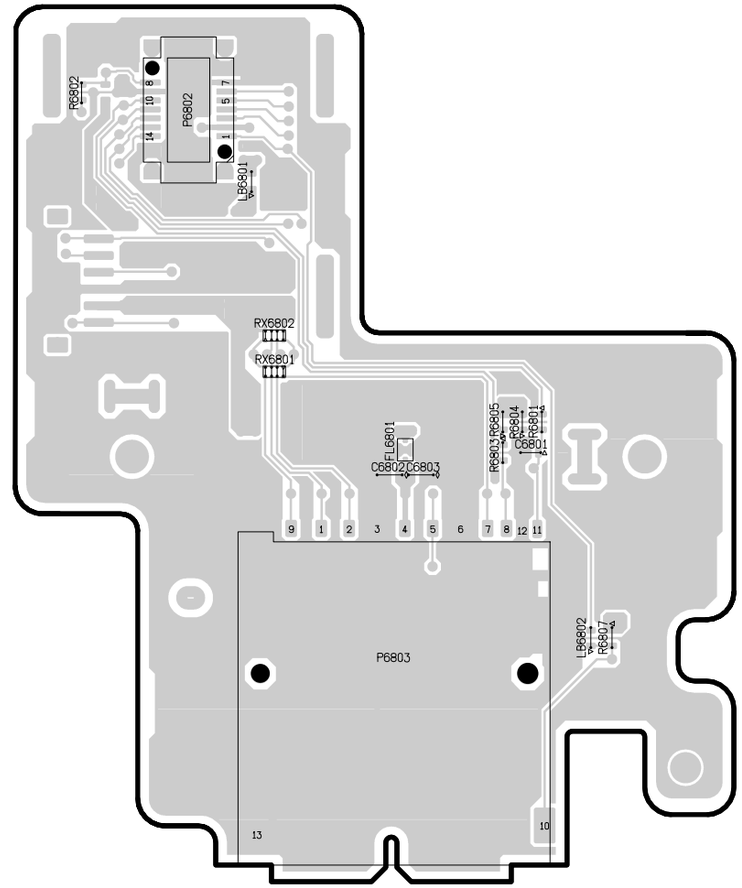
② Transferring (dubbing) indicator
③ Linked timer recordings with external equipment indicator
④ D.MIX (multi-channel DVD-Audio only)
When lit: Down-mixing is possible.
When off: The disc prevents down-mixing so only the two front channels can be played (Regarding DVD-Audio)
⑤ Recording mode
⑥ Disc type
⑦ Lights when the HDD, DVD or SD drive is selected
⑧ Main display section
⑨ Timer recording indicator

Card P.C.B.



(Component Side)

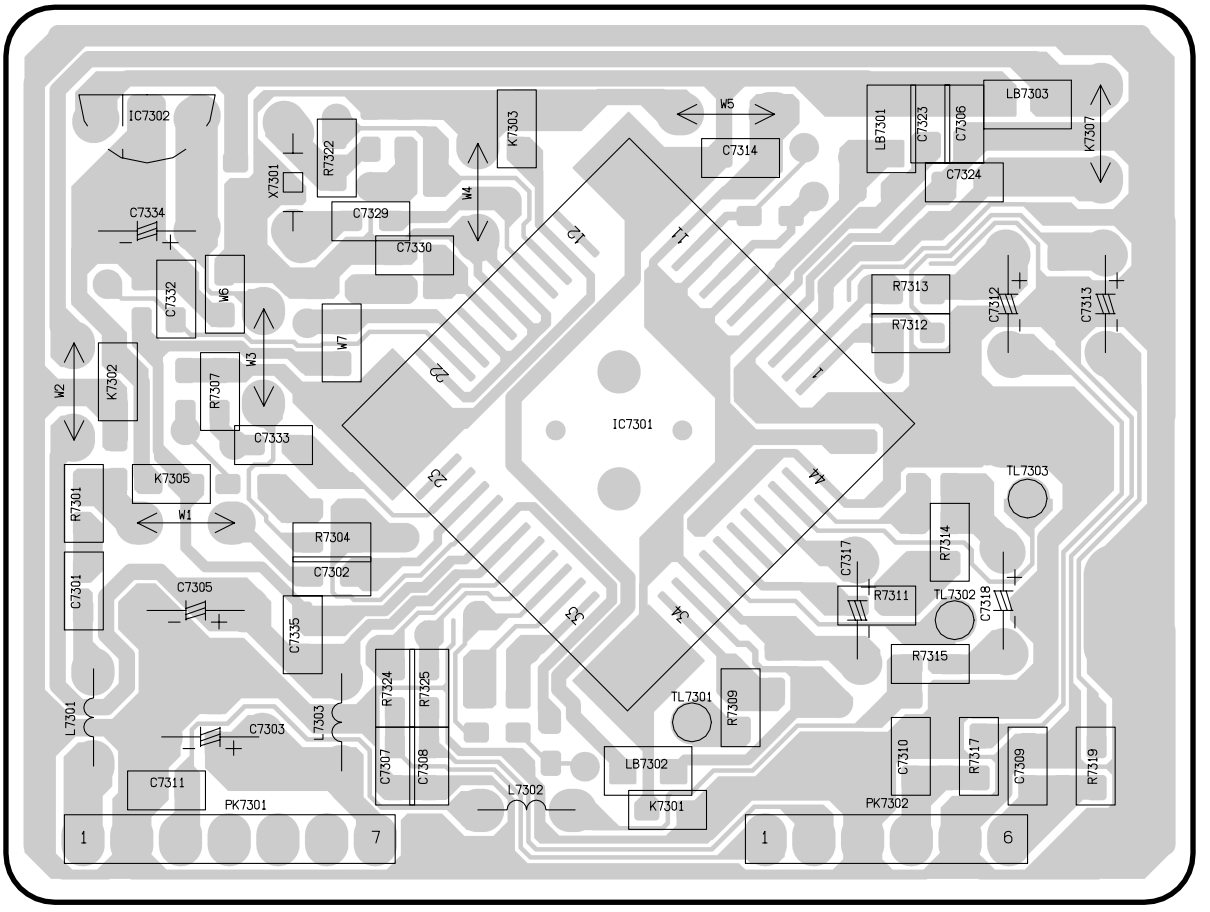
DMR-EH60EG
Card P.C.B. (Component Side)
(VEP73121E)



(Foil Side)

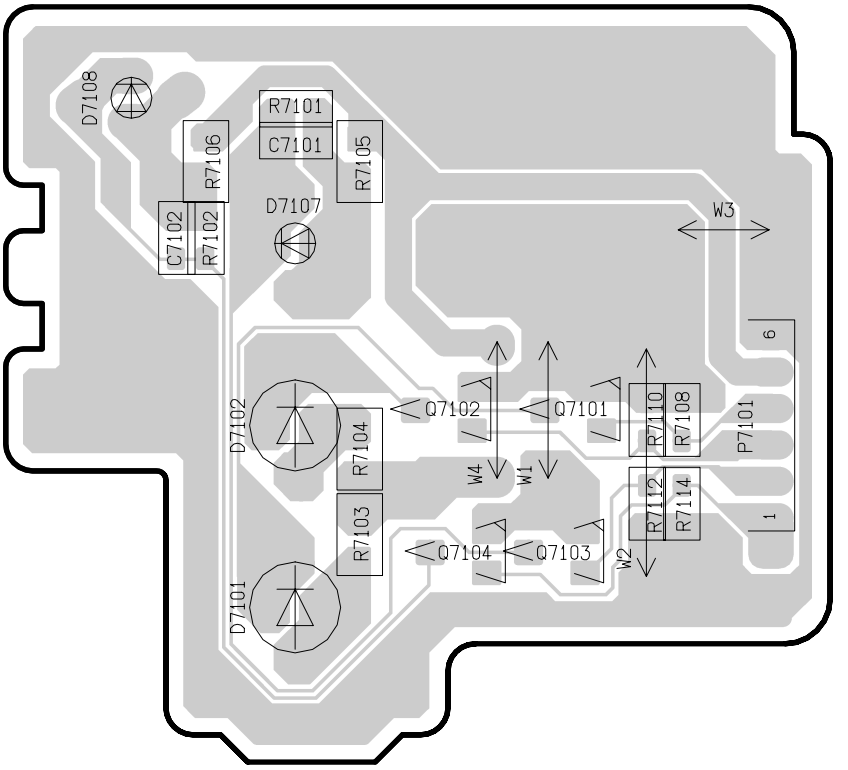
DMR-EH60EG
Card P.C.B. (Foil Side)
(VEP73121E)

Nicam Decoder P.C.B.

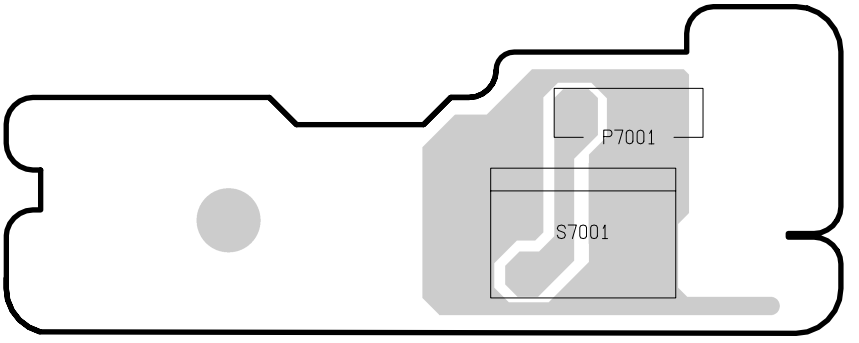


DMR-EH60EG
Nicam Decoder P.C.B.
(VEP07A51A)

LED P.C.B.



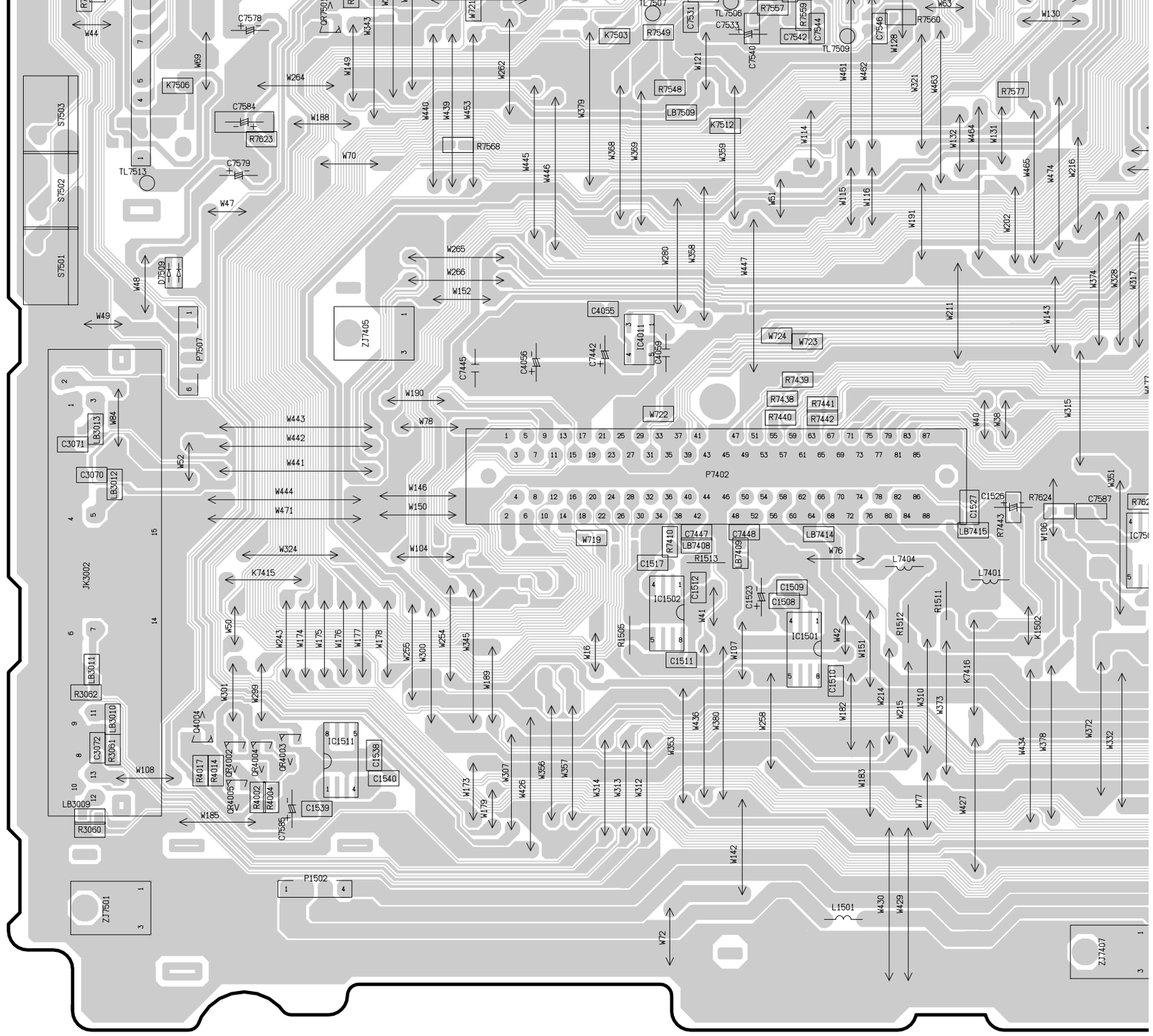
Front (L) P.C.B.



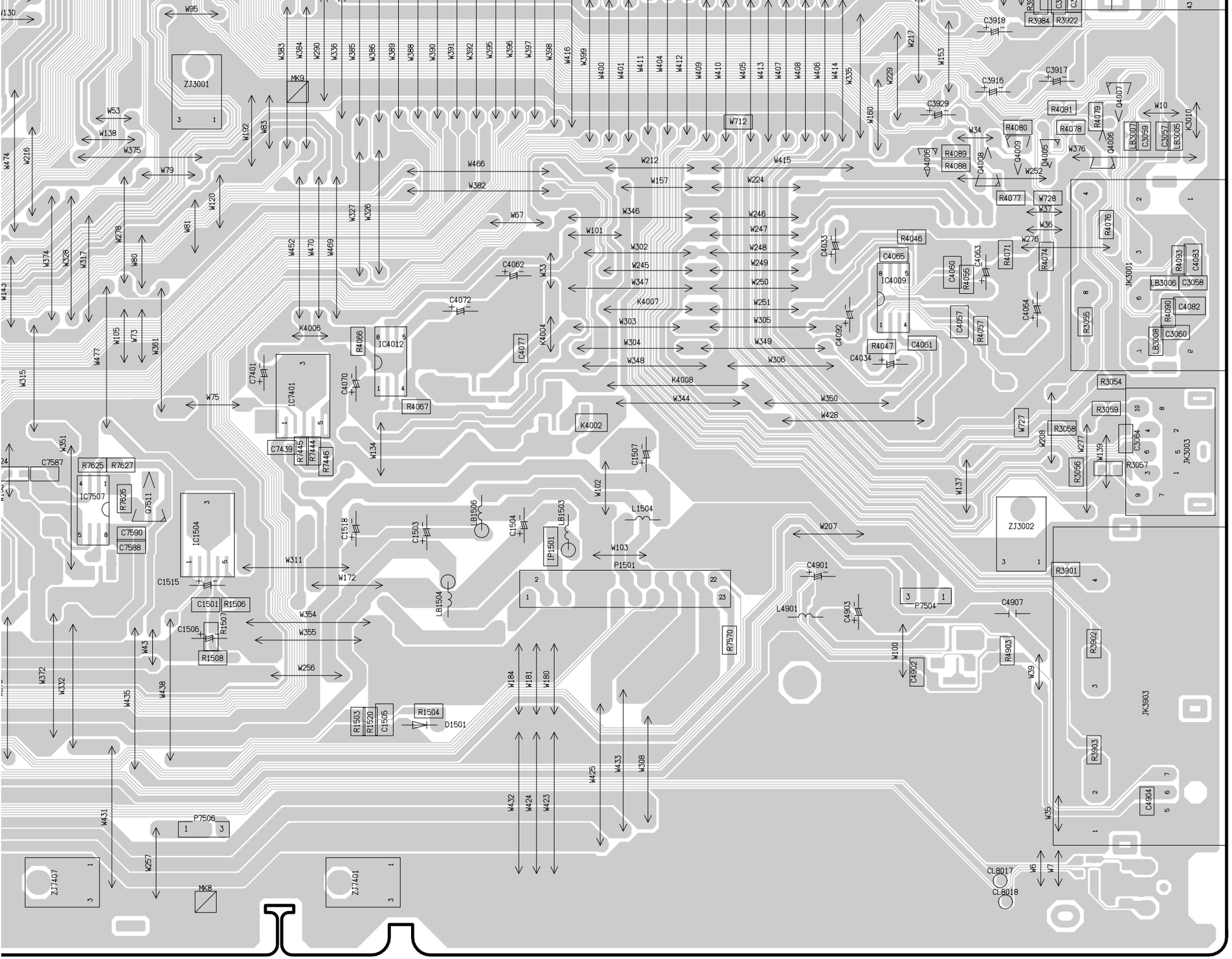
DMR-EH60EG
LED P.C.B. (VEP70116C)
Front (L) P.C.B. (VEP70115A)

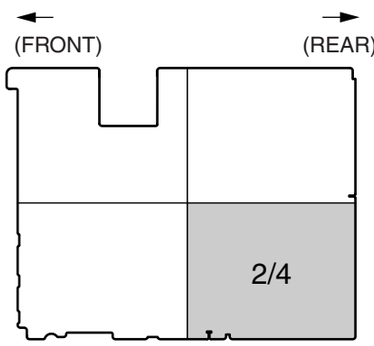
F D C B A

1 2 3 4 5



DMR-EH60EG
Main P.C.B. (VEP79107L)
(1/4 Section)

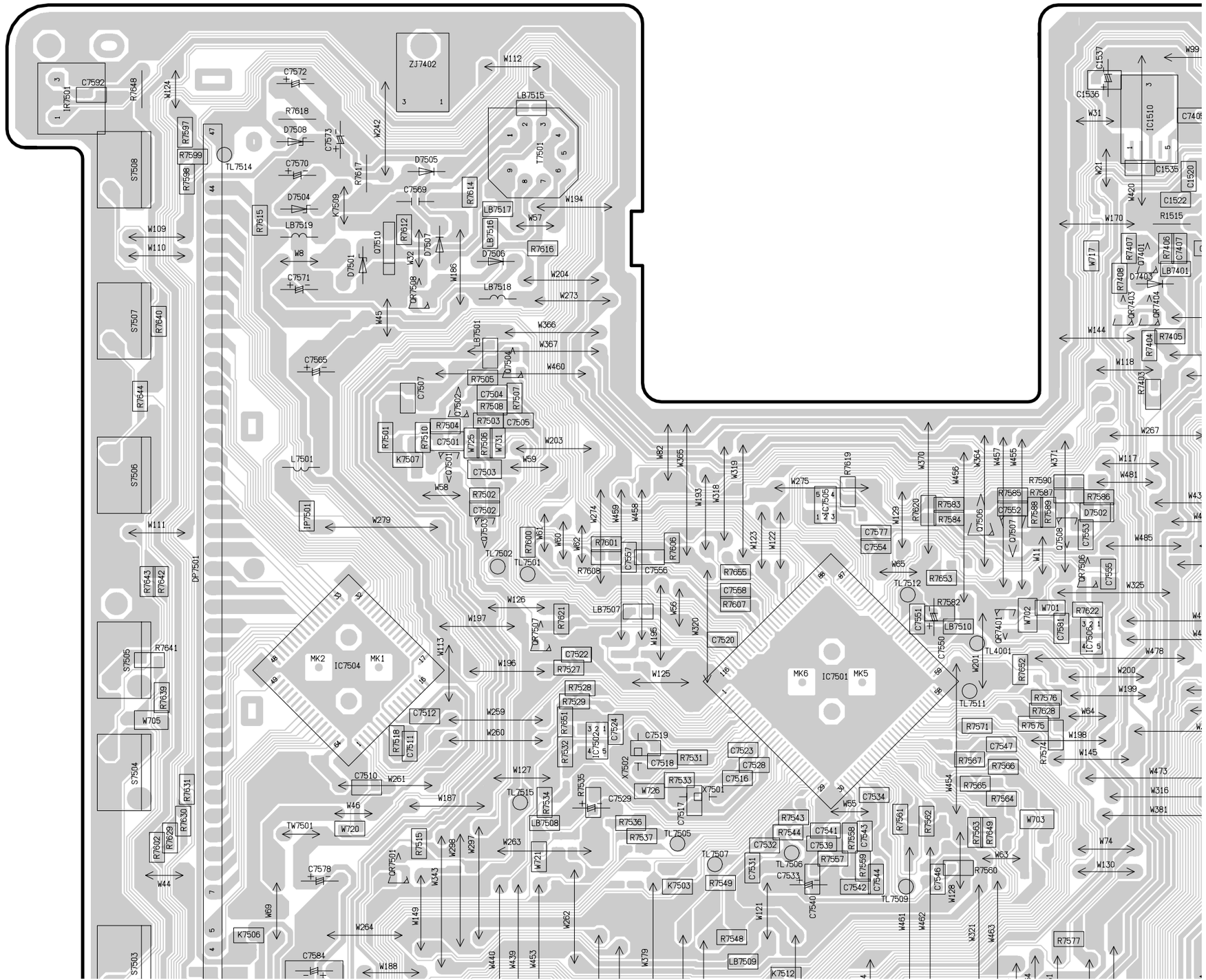




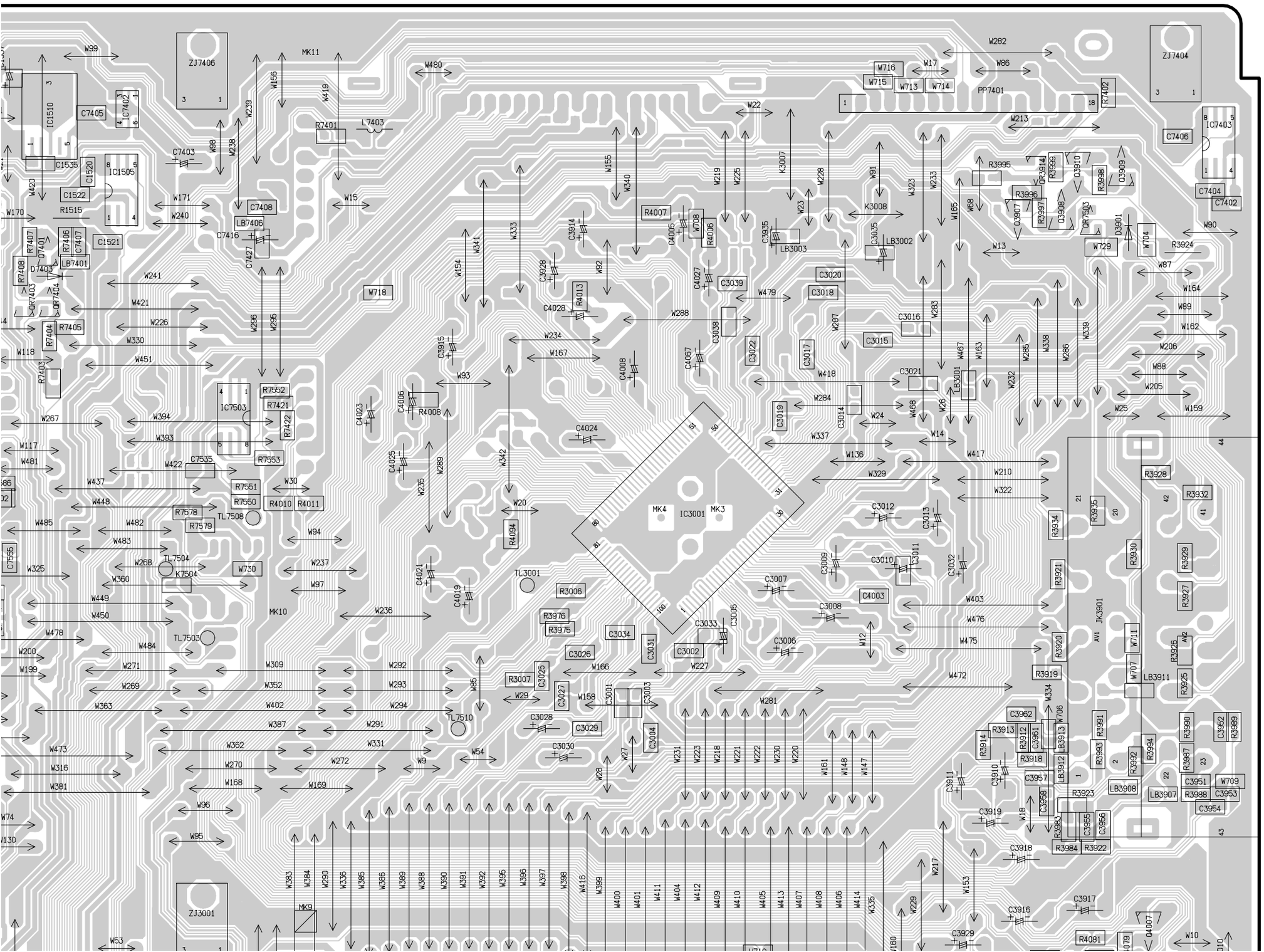
Location Map

DMR-EH60EG
Main P.C.B. (VEP79107L)
(2/4 Section)

5 6 7 8



DMR-EH60EG
Main P.C.B. (VEP79107L)
(3/4 Section)



(FRONT)

(REAR)

Location Map

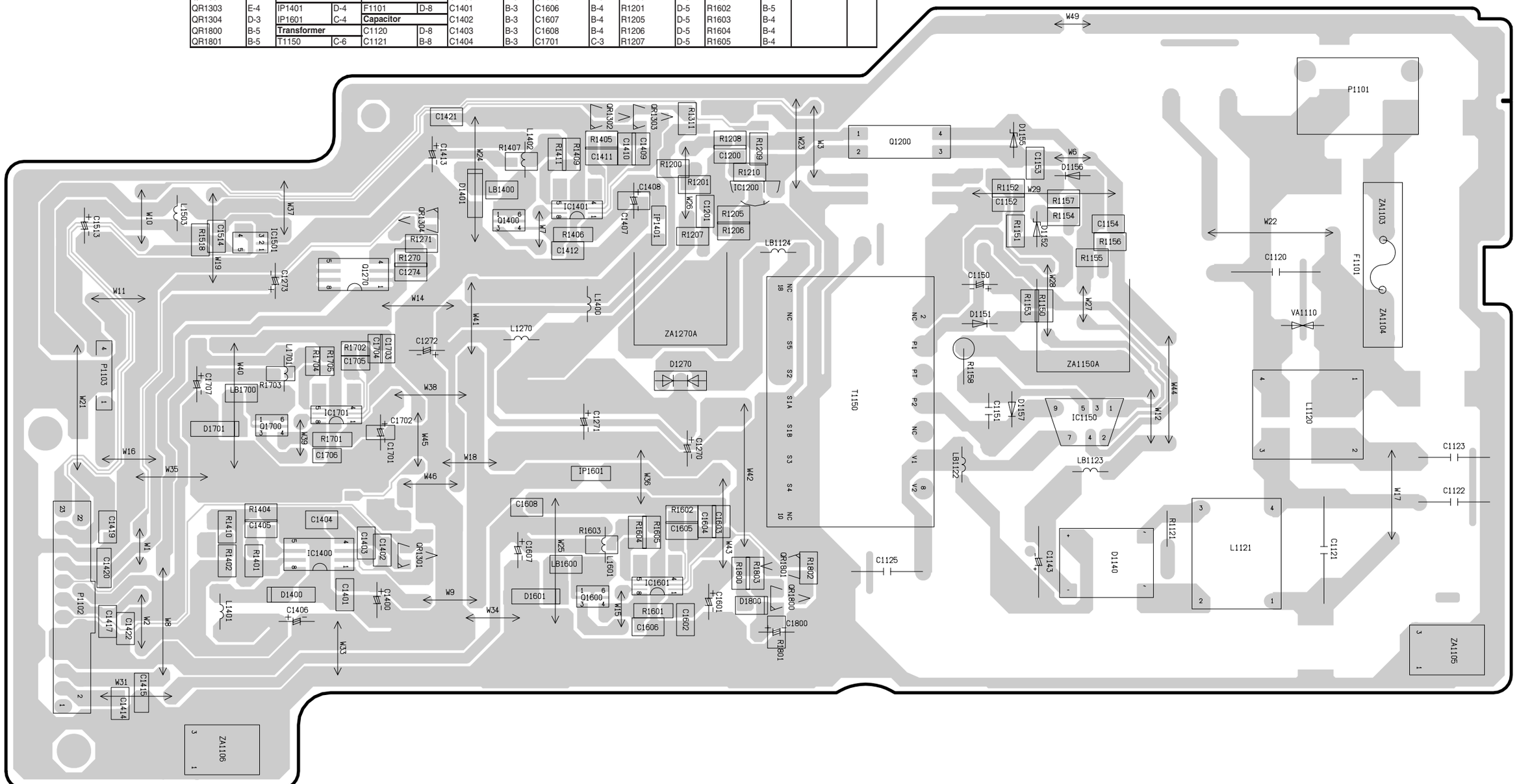
DMR-EH60EG/EE/EP
Main P.C.B. (VEP79107L)
(4/4 Section)

Main P.C.B.

Integrated Circuit	
IC1501	B-4
IC1502	B-3
IC1504	B-5
IC1505	F-5
IC1510	F-4
IC1511	B-2
IC3001	E-6
IC4009	C-7
IC4011	C-3
IC4012	C-5
IC7401	B-5
IC7402	F-5
IC7403	F-8
IC7501	D-3
IC7502	D-3
IC7503	E-5
IC7504	D-2
IC7505	E-3
IC7506	D-4
IC7507	B-4
Transistor	
Q3907	E-7
Q3908	F-7
Q3909	F-8
Q3910	F-7
Q4004	B-2
Q4006	C-8
Q4007	C-8
Q4008	C-7
Q4009	C-7
Q7401	E-4
Q7501	E-2
Q7502	E-2
Q7503	E-2
Q7504	E-3
Q7506	E-4
Q7507	E-4
Q7508	E-4
Q7510	E-2
Q7511	B-5
Transistor-resistor	
QR3914	F-7
QR4002	B-2
QR4003	B-2
QR4004	B-2
QR4005	A-2
QR7401	D-4
QR7403	E-4
QR7404	E-4
QR7501	D-2
QR7503	E-7
QR7506	D-4
QR7507	D-3
QR7508	E-2
Test Point	
CL8017	A-7
CL8018	A-7
TL3001	D-6
TL4001	D-4
TL7501	D-3
TL7502	D-2
TL7503	D-5
TL7504	D-5
TL7505	D-3
TL7506	D-3
TL7507	D-3
TL7508	E-5
TL7509	D-4
TL7510	D-6
TL7511	D-4
TL7512	D-4
TL7513	C-2
TL7514	F-2
TL7515	D-3
TW7501	D-2
Connector	
JK3001	C-8
JK3002	B-2
JK3003	B-8
JK3901	D-8
JK3903	B-8
P1501	B-6
P1502	A-2
P7402	B-3
P7504	B-7
P7507	C-2
P7506	A-5
PP7401	F-7
Diode	
D1501	A-5
D3901	E-8
D4005	C-7
D4006	C-7
D7403	E-4
D7501	E-2
D7502	E-4
D7504	F-2
D7505	F-2
D7506	E-2
D7507	E-2
D7508	F-2
D7509	C-2
Crystal Osillator	
X7501	D-3
X7502	D-3
IC Protector	
IP1501	B-6
IP7501	E-2
Coil	
L1501	A-4
L1504	B-6
L4901	B-7
L7401	B-4
L7403	F-5
L7404	B-4
LB1503	B-6
LB1504	B-6
LB1506	B-6
LB3001	E-7
LB3002	E-7
LB3003	E-7
LB3005	C-8
LB3006	C-8
LB3007	C-8
LB3008	C-8
LB3009	A-1
LB3010	B-2
LB3011	B-2
LB3012	B-2
LB3013	B-2
LB3907	D-8
LB3908	D-8
LB3911	D-8
LB3912	D-7
LB3913	D-7
LB7401	E-4
LB7406	E-5
LB7408	B-3
LB7409	B-3
LB7414	B-4
LB7415	B-4
LB7501	E-2
LB7507	D-3
LB7508	D-3
LB7509	C-3
LB7510	D-4
LB7515	F-3
LB7516	E-2
LB7517	F-2
LB7518	E-2
LB7519	E-2
Capacitor	
C1501	B-5
C1503	B-6
C1504	B-6
C1505	B-5
C1506	B-5
C1507	B-6
C1508	B-3
C1509	B-3
C1510	B-4
C1511	B-3
C1512	B-3
C1515	B-5
C1517	B-3
C1518	B-5
C1520	F-4
C1521	E-5
C1522	F-4
C1526	B-4
C1527	B-4
C1535	F-4
C1536	F-4
C1538	B-2
C1539	A-2
C1540	A-2
C3001	D-6
C3002	D-6
C3003	D-6
C3004	D-6
C3005	D-6
C3006	D-7
C3007	D-7
C3008	D-7
C3009	D-7
C3010	D-7
C3011	D-7
C3012	E-7
C3013	E-7
C3014	E-7
C3015	E-7
C3016	E-7
C3017	E-7
C3018	E-7
C3019	E-6
C3020	E-7
C3021	E-7
C3022	E-6
C3025	D-6
C3026	D-6
C3027	D-6
C3028	D-6
C3029	D-6
C3030	D-6
C3031	D-6
C3032	D-7
C3033	D-6
C3034	D-6
C3035	E-7
C3038	E-6
C3039	E-6
C3057	C-8
C3058	C-8
C3059	C-8
C3060	C-8
C3064	B-8
C3070	B-2
C3071	B-1
C3072	B-2
C3910	D-7
C3911	D-7
C3914	E-6
C3915	E-6
C3916	C-7
C3917	C-7
C3918	D-7
C3919	D-7
C3928	E-6
C3929	C-7
C3935	E-7
C3951	D-8
C3952	D-8
C3953	D-8
C3954	D-8
C3955	D-7
C3956	D-7
C3957	D-7
C3958	D-7
C3961	D-7
C3962	D-7
C4003	D-7
C4005	E-6
C4006	E-5
C4008	E-6
C4019	D-6
C4021	D-5
C4023	E-5
C4024	E-6
C4025	E-5
C4027	E-6
C4028	E-6
C4033	C-7
C4034	C-7
C4055	C-3
C4056	C-3
C4057	C-7
C4059	C-3
C4060	C-7
C4061	C-7
C4062	C-6
C4063	C-7
C4064	C-7
C4065	C-7
C4067	E-6
C4070	B-5
C4072	C-6
C4077	C-6
C4082	C-8
C4083	C-8
C4092	C-7
C4901	B-7
C4902	B-7
C4903	B-7
C4904	A-8
C4907	B-7
C7401	B-5
C7402	F-8
C7403	F-5
C7404	F-8
C7405	F-4
C7406	F-8
C7407	E-4
C7408	F-5
C7416	E-5
C7427	E-5
C7439	B-5
C7442	C-3
C7445	C-3
C7447	B-3
C7448	B-3
C7501	E-2
C7502	E-2
C7503	E-2
C7504	E-2
C7505	E-3
C7507	E-2
C7510	D-2
C7511	D-2
C7512	D-2
C7516	D-3
C7517	D-3
C7518	D-3
C7519	D-3
C7520	D-3
C7522	D-3
C7523	D-3
C7524	D-3
C7528	D-3
C7529	D-3
C7531	D-3
C7532	D-3
C7533	D-3
C7534	D-4
C7535	E-5
C7539	D-3
C7540	D-3
C7541	D-3
C7542	D-3
C7543	D-4
C7544	D-4
C7546	D-4
C7547	D-4
C7550	D-4
C7551	D-4
C7552	E-4
C7553	E-4
C7554	E-4
C7555	D-4
C7556	E-3
C7557	E-3
C7558	D-3
C7565	E-2
C7569	F-2
C7570	F-2
C7571	E-2
C7572	F-2
C7573	F-2
C7577	E-4
C7578	D-2
C7579	C-2
C7581	D-4
C7584	C-2
C7585	A-2
C7587	B-4
C7588	B-5
C7590	B-5
C7592	F-1
Resistor	
R1503	A-5
R1504	B-5
R1505	B-3
R1506	B-5
R1507	B-5
R1508	B-5
R1511	B-4
R1512	B-4
R1513	B-3
R1515	F-4
R1520	A-5
R3006	D-6
R3007	D-6
R3054	C-8
R3055	C-7
R3056	B-7
R3057	B-8
R3058	B-7
R3059	B-8
R3060	A-1
R3061	B-2
R3062	B-1
R3901	B-7
R3902	B-8
R3903	A-8
R3912	D-7
R3913	D-7
R3914	D-7
R3918	D-7
R3919	D-7
R3920	D-7
R3921	D-7
R3922	D-7
R3923	D-7
R3924	E-8
R3925	D-8
R3926	D-8
R3927	D-8
R3928	E-8
R3929	D-8
R3930	D-8
R3932	E-8
R3934	E-7
R3935	E-7
R3975	D-6
R3976	D-6
R3983	D-7
R3984	D-7
R3987	D-8
R3988	D-8
R3989	D-8
R3990	D-8
R3991	D-7
R3992	D-8
R3993	D-7
R3994	D-8
R3995	F-7
R3996	F-7
R3997	F-7
R3998	F-7
R3999	F-7
R4002	A-2
R4004	A-2
R4006	E-6
R4007	F-6
R4008	E-5
R4010	E-5
R4011	E-5
R4013	E-6
R4014	B-2
R4017	B-2
R4046	C-7
R4047	C-7
R4055	C-7
R4057	C-7
R4066	C-5
R4067	B-5
R4071	C-7
R4074	C-7
R4076	C-8
R4077	C-7
R4078	C-7
R4079	C-8
R4080	C-7
R4081	C-7
R4088	C-7
R4089	C-7
R4090	C-8
R4093	C-8
R4094	E-6
R4903	B-7
R7401	F-5
R7402	F-7
R7403	E-4
R7404	E-4
R7405	E-4
R7406	E-4
R7407	E-4
R7408	E-4
R7410	B-3
R7421	E-5
R7422	E-5
R7438	C-3
R7439	C-3
R7440	C-3
R7441	C-4
R7442	C-4
R7443	B-4
R7444	B-5
R7445	B-5
R7446	B-5
R7501	E-2
R7502	E-2
R7503	E-2
R7504	E-2
R7505	E-2
R7506	E-2
R7507	E-3
R7508	E-2
R7510	E-2
R7515	D-2
R7518	D-2
R7527	D-3
R7528	D-3
R7529	D-3
R7531	D-3
R7532	D-3
R7533	D-3
R7534	D-3
R7535	D-3
R7536	D-3
R7537	D-3
R7543	D-3
R7544	D-3
R7548	C-3
R7549	D-3
R7550	E-5
R7551	E-5
R7552	E-5
R7553	E-5
R7557	D-3
R7558	D-3
R7559	D-4
R7560	D-4
R7561	D-4
R7562	D-4
R7563	D-4
R7564	D-4
R7565	D-4
R7566	D-4
R7567	D-4
R7568	C-3
R7570	B-6
R7571	D-4
R7574	D-4
R7575	D-4
R7576	D-4
R7577	C-4
R7578	E-5
R7579	E-5
R7582	D-4
R7583	E-4
R7584	E-4
R7585	E-4
R7586	E-4
R7587	E-4
R7588	E-4
R7589	E-4
R7590	E-4
R7597	F-2
R7598	F-2
R7599	F-2
R7600	E-3
R7601	E-3
R7602	D-1
R7606	E-3
R7607	D-3
R7608	E-3
R7612	E-2
R7614	F-2
R7615	F-2
R7616	E-3
R7617	F-2
R7618	F-2
R7619	E-3
R7620	E-4
R7621	D-3
R7622	D-4
R7623	C-2
R7624	B-4
R7625	B-4
R7626	B-5
R7627	B-5
R7628	D-4
R7629	D-2
R7630	D-2
R7631	D-2
R7639	D-1
R7640	E-1
R7641	D-1
R7642	D-1
R7643	D-1
R7644	E-1
R7648	F-1
R7649	D-4
R7651	D-3
R7652	D-4
R7653	D-4
R7655	D-3
Transformer	
T7501	F-3

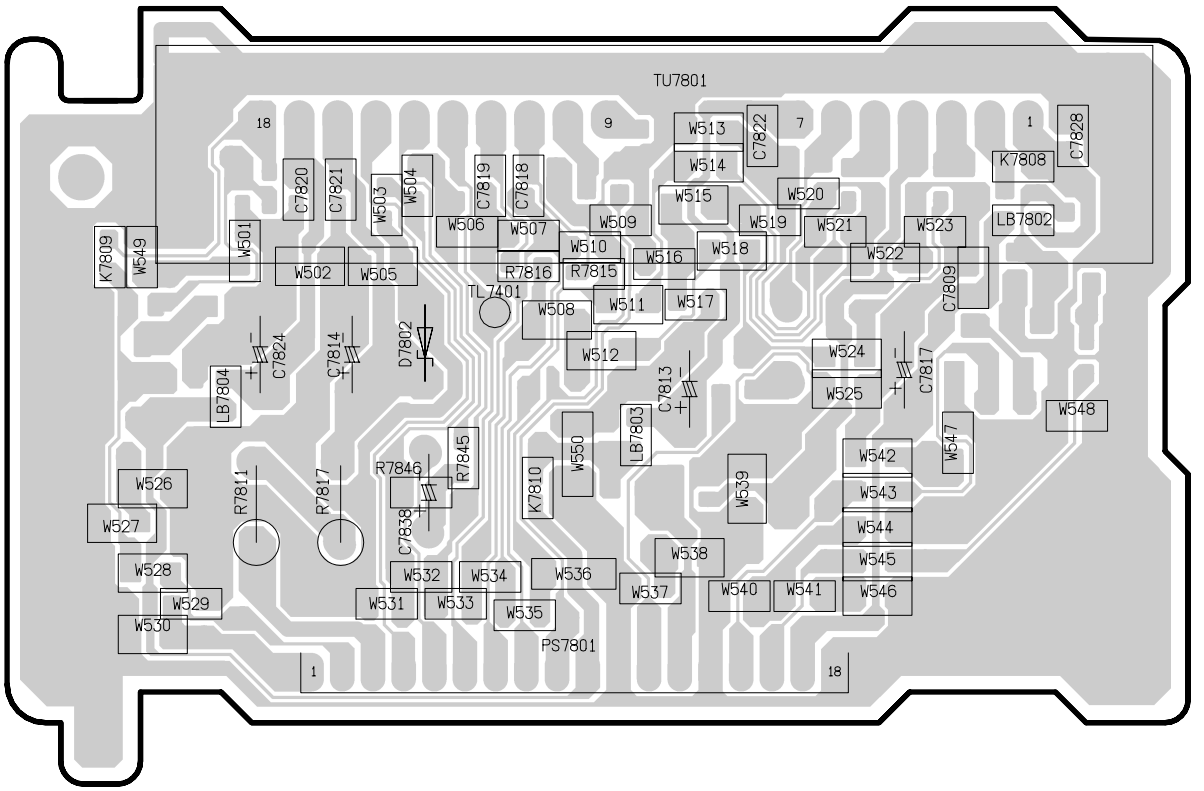
Power P.C.B.

Power P.C.B.																	
Integrated Circuit		**Connector**		**Coil**		C1122	B-9	C1405	B-2	C1702	C-3	R1208	D-5	R1701	C-3
IC1150	C-7	P1101	E-8	L1120	C-8	C1123	C-9	C1406	B-2	C1703	C-3	R1209	D-5	R1702	C-3
IC1200	D-5	P1102	B-1	L1121	B-8	C1125	B-6	C1407	D-4	C1704	C-3	R1210	D-5	R1703	C-2
IC1400	B-3	P1103	C-1	L1270	C-4	C1143	B-6	C1408	D-4	C1705	C-3	R1270	D-3	R1704	C-3
IC1401	D-4	**Diode**		L1400	D-4	C1150	D-6	C1409	D-4	C1706	C-3	R1271	D-3	R1705	C-3
IC1501	D-2	D1140	B-7	L1401	B-2	C1151	C-6	C1410	D-4	C1707	C-2	R1311	E-5	R1800	B-5
IC1601	B-4	D1151	C-6	L1402	D-4	C1152	D-6	C1411	D-4	C1800	B-5	R1401	B-2	R1801	B-5
IC1701	C-3	D1152	D-6	L1503	D-2	C1153	D-6	C1412	D-4	**Resistor**		R1402	B-2	R1802	B-5
Transistor		D1155	D-6	L1601	B-4	C1154	D-7	C1413	D-3	R1150	C-6	R1404	B-2	R1803	B-5
Q1200	D-6	D1156	D-7	L1701	C-2	C1200	D-5	C1421	E-3	R1151	D-6	R1405	D-4	**Varistor**	
Q1270	D-3	D1270	C-5	LB1122	C-6	C1201	D-5	C1513	D-1	R1152	D-6	R1406	D-4	VA1110	C-8
Q1400	D-4	D1400	B-2	LB1123	C-7	C1270	C-5	C1514	D-2	R1153	C-6	R1407	D-4		
Q1600	B-4	D1401	D-3	LB1124	C-5	C1271	C-4	C1601	B-5	R1154	D-7	R1409	D-4		
Q1700	C-2	D1601	B-4	LB1400	D-4	C1272	C-3	C1602	B-5	R1155	D-7	R1410	B-2		
Transistor-resistor		D1701	C-2	LB1600	B-4	C1273	D-2	C1603	B-5	R1156	D-7	R1411	D-4		
QR1301	B-3	D1800	B-5	LB1700	C-2	C1274	D-3	C1604	B-5	R1157	D-7	R1518	D-2		
QR1302	E-4	**IC Protector**		**Fuse**		C1400	B-3	C1605	B-5	R1200	D-5	R1601	B-4		
QR1303	E-4	IP1401	D-4	F1101	D-8	C1401	B-3	C1606	B-4	R1201	D-5	R1602	B-5		
QR1304	D-3	IP1601	C-4	**Capacitor**		C1402	B-3	C1607	B-4	R1205	D-5	R1603	B-4		
QR1800	B-5	**Transformer**		C1120	D-8	C1403	B-3	C1608	B-4	R1206	D-5	R1604	B-4		
QR1801	B-5	T1150	C-6	C1121	B-8	C1404	B-3	C1701	C-3	R1207	D-5	R1605	B-4		



DMR-EH60EG
Power P.C.B.
(VEP01961A)

Tuner P.C.B.



DMR-EH60EG
Tuner P.C.B.
(VEP07A77A)

M:Main Net Section(Page: A)
AV:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

S VIDEO IN | VIDEO IN | AUDIO IN L | AUDIO IN R

JK3002
K1U415B00001
FRONT AV3 INPUT JACK

ZJ7501
K9ZZ00001279

VIDEO OUT | AUDIO L OUT | AUDIO R OUT | VIDEO AV4 IN | AUDIO L AV4 IN | AUDIO R AV4 IN

JK3001
K2HA612B0055
AV4 RCA I/O JACK

IC4011
C0DBAHD00013
(REG.AU+5V)

IC4009
C0ABBB000216
(AUDIO BUFFER)

IC4012
C0ABBB000118
(AUDIO BUFFER)

Q4004
2SB1218ARL
(AUDIO MUTE)

Q4006
2SD132800L
(AUDIO MUTE)

Q4007
2SD132800L
(AUDIO MUTE)

Q4008
2SD132800L
(AUDIO MUTE)

Q4009
2SD132800L
(AUDIO MUTE)

QR4002
UNR521100L
(XTMUTE)

QR4004
UNR521100L
(XDMUTE)

QR4003
UNR521100L
(XDMUTE)

QR4005
UNR521100L
(XTMUTE)

QR3914
UNR521300L
(P50 THROU H :ON)

Q3910
2SD132800L

Q3909
2SD132800L

Q3908
2SD132800L

Q3907
2SD132800L

P50 CONTROL

DMR-EH60EG
A/V I/O Section (Main P.C.B.(2/3))
Schematic Diagram(AV)

M:Main Net Section(Page: A)
AV:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

B

S VIDEO AV4 IN
S VIDEO OUT
JK3003
K2HA210B0002
AV4 Y/C JACK
C3064 0.1
R3057 75
R3059 75
R3056 75
R3058 75

COMPONENT VIDEO OUT
(PROGRESSIVE/INTERLACE)
DIGITAL AUDIO OUT
(PCM/BITSTREAM)
JK3903
K1U407B00006
COMPONENT VIDEO OUT JACK
OPTICAL
ZJ3002 K9ZZ00001279
ZJ3001 K9ZZ00001279
R3903 75
R3902 75
R3901 75
R4903 0
L4901 22u
C4904 0.1
C4903 25V47
C4907 0.022
C4902 0.1
C4901 6V47
G IEC OUT A
ANA5V

LB3003 J0JGC0000020
PS+11.6V
R4094 22K
C3935 25V220
R4007 82K
C4024 25V100
C4008 25V100
C4019 16V10
C4021 16V10
C3918 50V10
C3919 50V10
C3911 35V10
C3910 35V10
C3929 50V1
C4025 35V10
C3917 50V1
C3915 50V10
R4009 82K
C4006 35V10
C4026 35V10
R4010 82K
C3928 35V10
C4023 35V10
C3916 50V1
C3914 50V10
C4005 50V22

IC3001
C1AB00002100
(A/V PROCESSOR)

C4027 50V22
C4067 25V220
C3039 0.1
C3038 0.1
C3022 0.1
C3021 0.1
C3020 0.1
C3019 0.1
C3018 0.1
C3017 0.1
C3016 0.1
C3015 0.1
R4006 82K

TL3001
C ADC
V SYNC OUT
Y/V ADC
VCC 5V
SLICER
C SYNC OUT
DET IN
SCL IN
SDA IN
V SYNC DET
ENC C IN
V DET FIL
ENC Y IN
VCC 5V
ENC R/R-Y IN
GND
ENC G/Y IN
VGND
ENC B/B-Y IN
REG2.5
R3006 8200
R3976 100
R3975 100
R3007 33
C3025 0.1
C3026 1
C3027 0.1
C3028 50V4.7
C3029 0.1
C3030 50V4.7
C3031 0.01

AV2 R/C IN
REG2.5
AV2 G IN
VGND
AV2 B IN
VCC 5V
R-Y OUT
VCC 5V
AV1 R/C OUT
EXT CTL1
B-Y OUT
AV1 B OUT
NC
Y OUT(COMPONENT)
Y SAG(COMPONENT)
MUTE FIL
AV1 G OUT
VGND
AV4 Y OUT
Y SAG
VGND
AV4 C OUT
V OUT
V SAG
VCC 5V
AV1 V OUT
FSS OUT
AV2 V OUT
VGND
TUNER V IN

C3001 0.1
C3002 0.01
C3003 0.1
C3004 0.1
C3005 6V470
C3006 6V470
C3007 10V470
C3008 10V100
C4003 1
C3009 10V470
C3010 10V100
C3011 0.1
C3012 10V470
C3013 10V100
C3014 0.1

FRONT RIN
1/2REF
DT C IN
DT Y IN
VCC 11.6V
AV3 C IN
1/2REF GND
AV4 C IN
VCC ALL 5V
AV3 Y IN
VCC 5V
AV4 Y IN
EXT CTL4
AV3 V IN
EXT CTL3
AV4 V IN
AV1 FB OUT
AV1 V IN
AV2 FB IN
AV2 V/Y IN

R3918 470
R3914 470
R3913 10K
R3912 10K
R3962 220P
R3961 220P
LB3912 J0JBC0000011
LB3913 J0JBC0000011
R3922 470
R3923 470
R3983 10K
R3984 10K
C3955 220P
C3956 220P
LB3907 J0JBC0000011
LB3908 J0JBC0000011

JK3901
K1FB242B0005
SCART I/O JACK

R3993 1K
C3957 470P
R3994 47K
R3991 47K
R3992 1K
C3958 470P
LB3911 J0JGC0000020
R3989 1K
R3990 47K
R3987 47K
C3953 470P
C3952 47P
C3951 47P
R3988 1K
C3954 470P
R3919 75
D3901 MA2C165001VT
R3924 220
R3920 75
R3921 75
R3930 75
R3934 75
R3935 75
R3928 75
R3929 75
R3927 75
R3926 75
R3925 75
R3932 75

AV1
(TV)

1	AUDIO OUT CH2(R)
2	AUDIO IN CH2(R)
3	AUDIO OUT CH1(L)
4	GND(A)
5	GND(BLUE)
6	AUDIO IN CH1(L)
7	BLUE
8	PB +12V
9	GND(GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND(RED)
14	GND(BLANK)
15	RED/C OUT
16	BLANKING
17	GND(V OUT)
18	GND(V IN)
19	VIDEO OUT/Y OUT
20	VIDEO IN
21	GND

AV2
(DECODER/ EXT)

1	AUDIO OUT CH2(R)
2	AUDIO IN CH2(R)
3	AUDIO OUT CH1(L)
4	GND(A)
5	GND(BLUE)
6	AUDIO IN CH1(L)
7	BLUE
8	AV2 +12V
9	GND(GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND(RED)
14	GND(BLANK)
15	RED/C IN
16	BLANKING
17	GND(V OUT)
18	GND(V IN)
19	VIDEO OUT
20	VIDEO IN/Y IN
21	GND

AV2-BPIN
G AV2 VIN A
AV2 BLANKING
G R C IN A
G G IN A
G B IN A
G TU VIDEO A
G CPS VOUT A

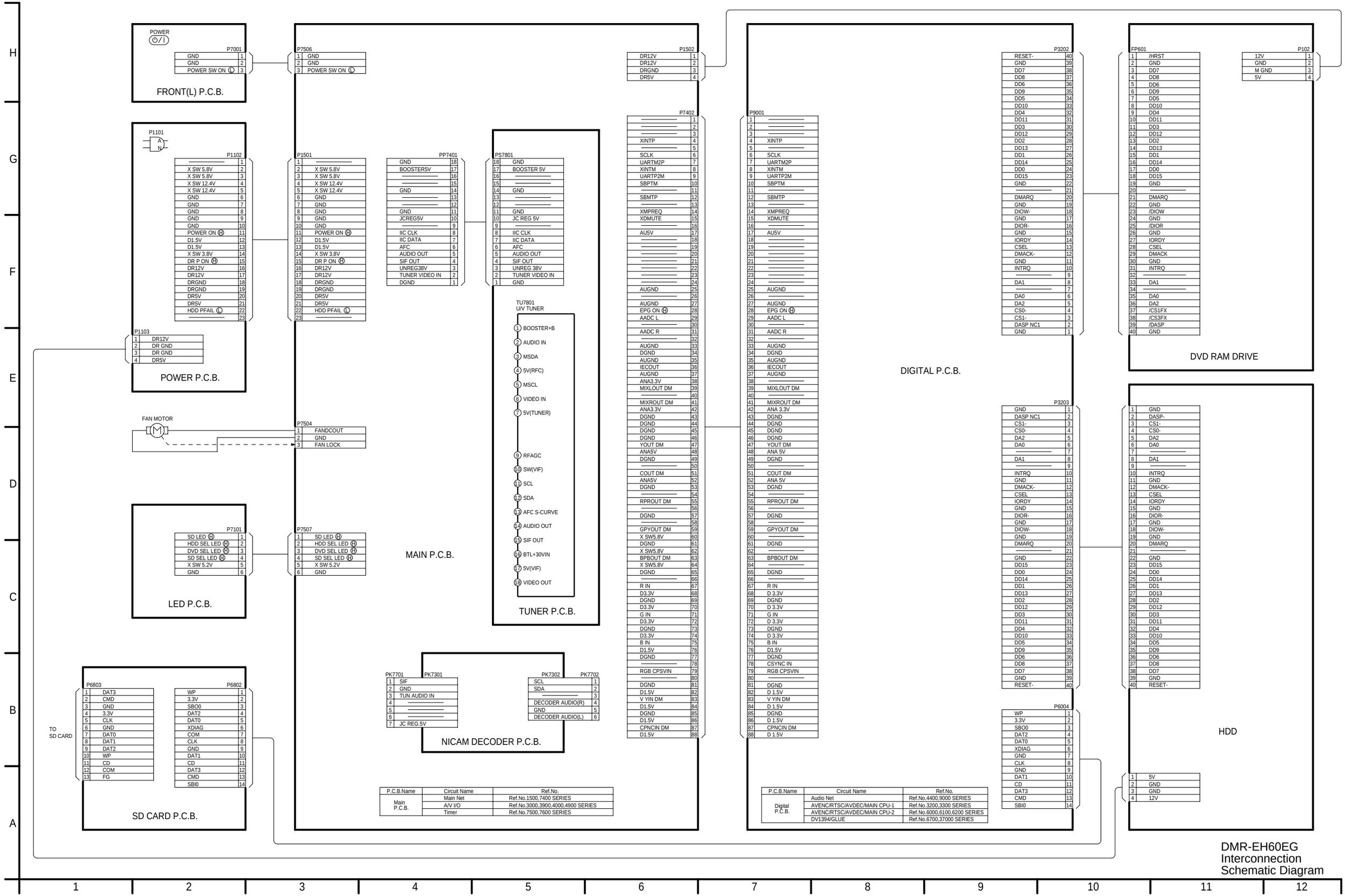
BOOSTER+5V
C3034 0.01
C3035 6V100
PS+5V
LB3001 J0JGC0000020
PS 5V
BOOSTER+5V
LB3002 J0JGC0000020
C3033 0.01
C3032 6V100

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EH60EG
A/V I/O Section (Main P.C.B.(2/3))
Schematic Diagram(AV)

DMR-EH60EG A/V I/O Section (Main P.C.B.(2/3)) Schematic Diagram(AV)

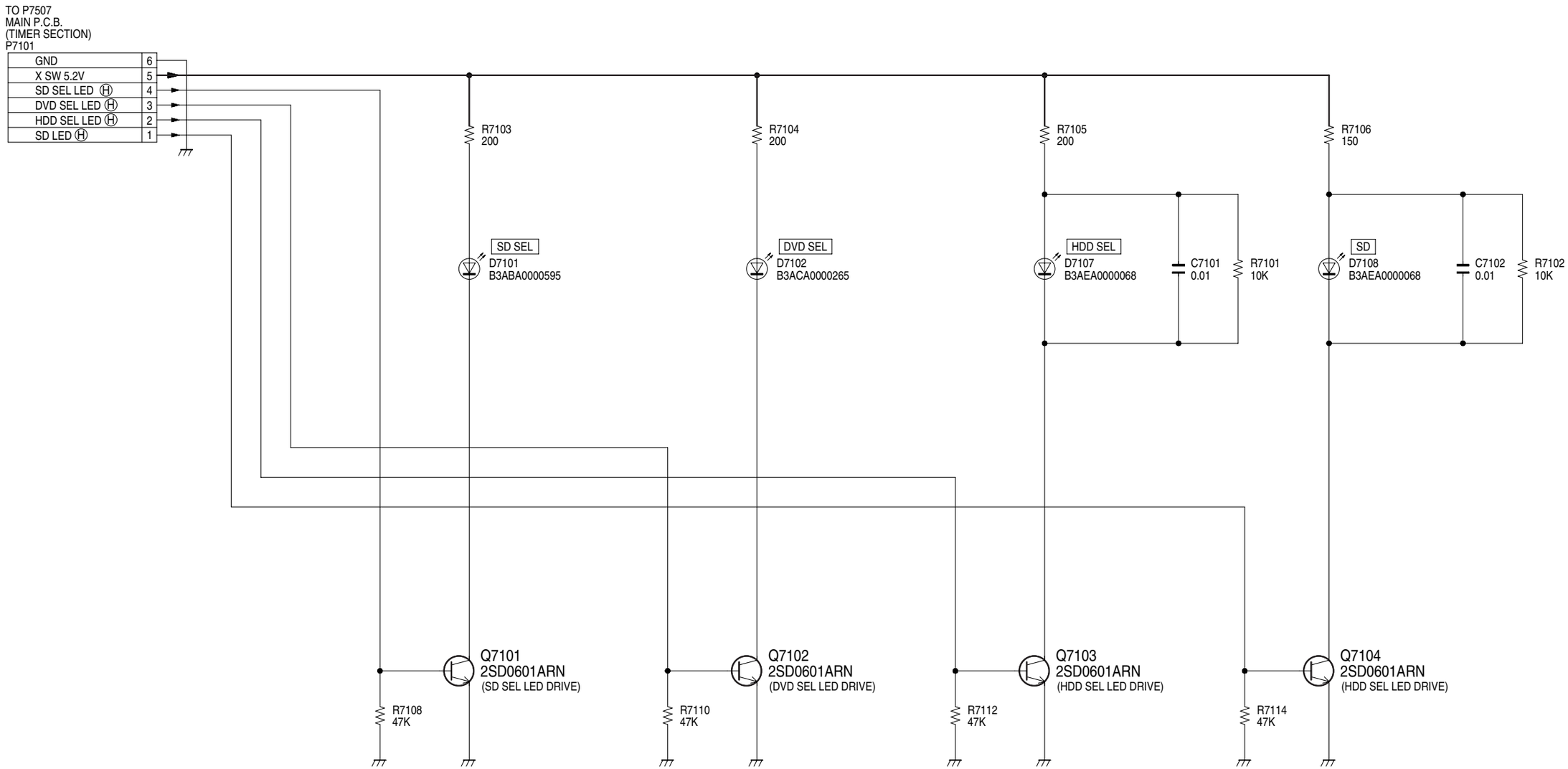
12 13 14 15 16 17 18 19 20 21 22



P.C.B.Name	Circuit Name	Ref.No.
Main P.C.B.	Main Net	Ref.No.1500,7400 SERIES
	A/V I/O	Ref.No.3000,3900,4000,4900 SERIES
	Timer	Ref.No.7500,7600 SERIES

P.C.B.Name	Circuit Name	Ref.No.
Digital P.C.B.	Audio Net	Ref.No.4400,9000 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-1	Ref.No.3200,3300 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-2	Ref.No.6000,6100,6200 SERIES
	DV1394/GLUE	Ref.No.6700,37000 SERIES

DMR-EH60EG Interconnection Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
LED Schematic Diagram

M:Main Net Section(Page: A)
AV:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

TO P9001
DIGITAL P.C.B.
(Audio Net Section)
P7402

	1
	2
	3
XINTP	4
	5
SCLK	6
UARTM2P	7
XINTM	8
UARTP2M	9
SBPTM	10
	11
SBMTP	12
	13
XMPREQ	14
XDMUTE	15
	16
AU5V	17
	18
	19
	20
	21
	22
	23
	24
AUGND	25
	26
AUGND	27
EPG ON Ⓗ	28
AADC L	29
	30
AADC R	31
	32
AUGND	33
DGND	34
AUGND	35
IECOUT	36
AUGND	37
ANA3.3V	38
MIXLOUT DM	39
	40
MIXROUT DM	41
ANA3.3V	42
DGND	43
DGND	44
DGND	45
DGND	46
YOUT DM	47
ANA5V	48
DGND	49
	50
COUT DM	51
ANA5V	52
DGND	53
	54
RPROUT DM	55
	56
DGND	57
	58
GPYOUT DM	59
X SW5.8V	60
DGND	61
X SW5.8V	62
BPBOUT DM	63
X SW5.8V	64
DGND	65
	66
R IN	67
D3.3V	68
DGND	69
D3.3V	70
G IN	71
D3.3V	72
DGND	73
D3.3V	74
B IN	75
D1.5V	76
DGND	77
CSYNC IN	78
RGB CPSVIN	79
	80
DGND	81
D1.5V	82
V YIN DM	83
D1.5V	84
DGND	85
D1.5V	86
CPNCIN DM	87
D1.5V	88

XINTP (T)
G SCLK A (T)
G UARTM2P A (T)
XINTM (T)
G UARTP2M A (T)
G SBPTM A (T)
G SBMTP A (T)
XMPREQ (T)
XDMUTE (AV)
BOOTREQ (T)
AU5V (AV)

C7442 16V47
C7445 0.022

K7415
EPG ON Ⓗ (T)
G AADC L A (AV)
G AADC R A (AV)

R7410 820
LB7408 J0JHC0000032
G IEC OUT A (AV)
G MIXLOUT DM A (AV)
G MIXROUT DM A (AV)
C7447 1

R7439 22
LB7409 J0JHC0000032
G YOUT DM A (AV)
ANA5V (AV)
G COUT DM A (AV)
C7448 1
R7438 22
R7440 22
G RPROUT DM A (AV)

R7441 22
LB7414 J0JHC0000032
G GPYOUT DM A (AV)
X SW 5.8V A (AV)
R7442 22
G BPBOUT DM A (AV)

NET STATUS (T)
G R C IN A (AV)
D3.3V (T)
L7404 22u
G G IN A (AV)
L7401
G B IN A (AV)

R7443 100
K7416
G CSYNC IN A (T)
G AV2 VIN A (AV)
LB7415 J0JHC0000032
G V YIN DM A (AV)
G CIN DM A (AV)

ZJ7405 K9ZZ00001279
ZJ7406 K9ZZ00001279
ZJ7407 K9ZZ00001279
R1512 270
R1513 270

TO P1102
POWER P.C.B.
P1501

	1
X SW 5.8V	2
X SW 5.8V	3
X SW 12.4V	4
X SW 12.4V	5
GND	6
GND	7
GND	8
GND	9
GND	10
POWER ON Ⓗ	11
D1.5V	12
D1.5V	13
X SW 3.8V	14
DR P ON Ⓗ	15
DR12V	16
DR12V	17
DRGND	18
DRGND	19
DR5V	20
DR5V	21
HDD PFAIL Ⓛ	22
	23

IP1501 K5H3022A0013
P
LB1504 J0JKB0000003
LB1503 J0JKB0000003
C1503 16V220
C1504 25V100
LB1506 J0JKB0000003
C1505 10
R1520 8200
L1501 22u
D1501 MA2C165001VT
R1504 100
R1503 3300

P1502

DR12V	1
DR12V	2
DRGND	3
DR5V	4

TO DVD-R/RAM DRIVE

HDD PFAIL Ⓛ (T)
DR P ON Ⓗ (T)
DIP ON Ⓗ (T)

ZJ7401 K9ZZ00001279
C1518 6V680
K1502
C1527 10
C1526 10V100
R1511 270
C1507 10V47
L1504 10u

X SW 12.4V (T)
PWR SAVE Ⓗ (T)
GND (AV)(T)
DDGND (T)
FAN GND (T)
RESET 5.2V (T)
X SW 3.3V (T)

ANA+5V
X SW+3.8V
X SW 5.8V
R7402 10K
QR7401 UNR521300L (PWR SAVE Ⓗ:ON)
C7401 16V470
REG.PS+11.6V
X SW+3.8V
C1520 1
ANA+3.3V
D+3.3V

A
X SW 5.8V
C1510 1

IC1501
C0CBCDD00006
(REG.ANA+5V)
Vin, CONT, BIAS, DRIVER, TERMINAL SHUTDOWN, CURRENT LIMITTER, REFERENCE, Vout, GND
C1508 0.01
C1509 1

IC7401
C0CBCYG00004
(REG.PS+11.6V)
IC, Vin, Ⓗ:ON, Vout, Vadj., GND
C7439 0.1
R7446 2000
R7444 30
R7445 6800

IC1505
C0CBCBD00018
(REG.X SW+3.3V)
Vin, CONT, BIAS, DRIVER, TERMINAL SHUTDOWN, CURRENT LIMITTER, REFERENCE, Vout, GND
C1521 1
R1515 270
C1522 330P

IMPORTANT SAFETY NOTICE:
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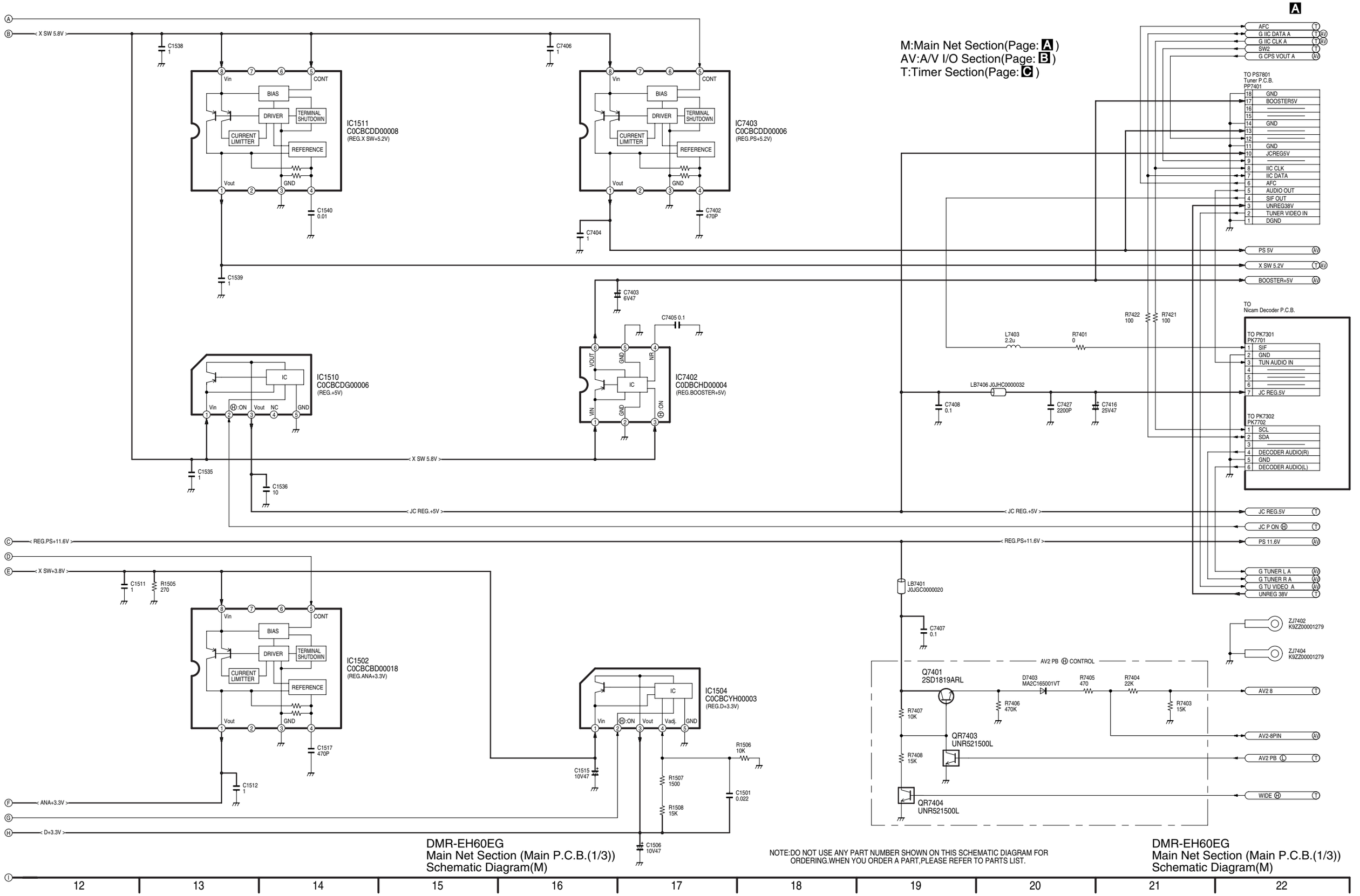
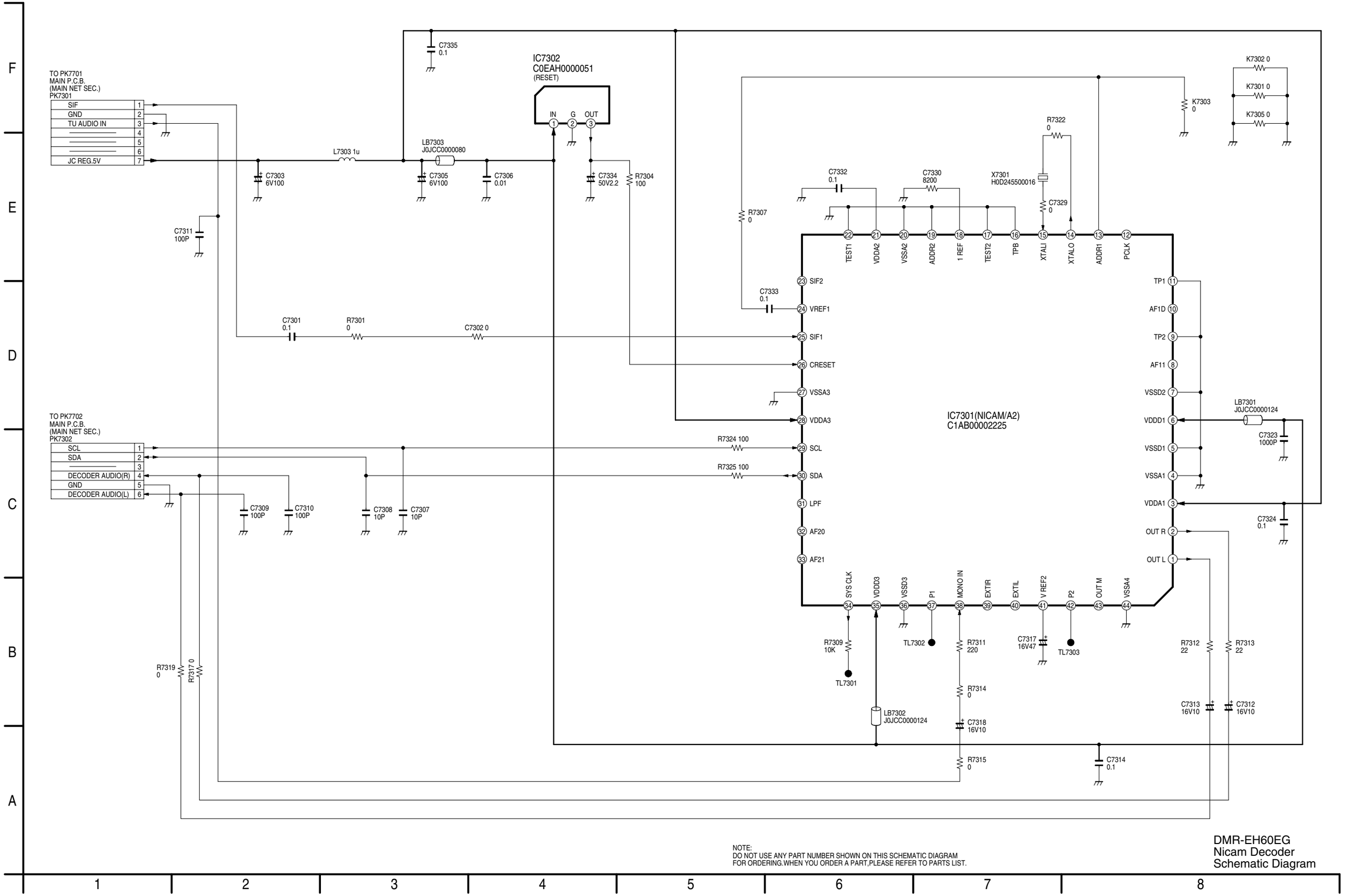
DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)



DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)



NOTE:
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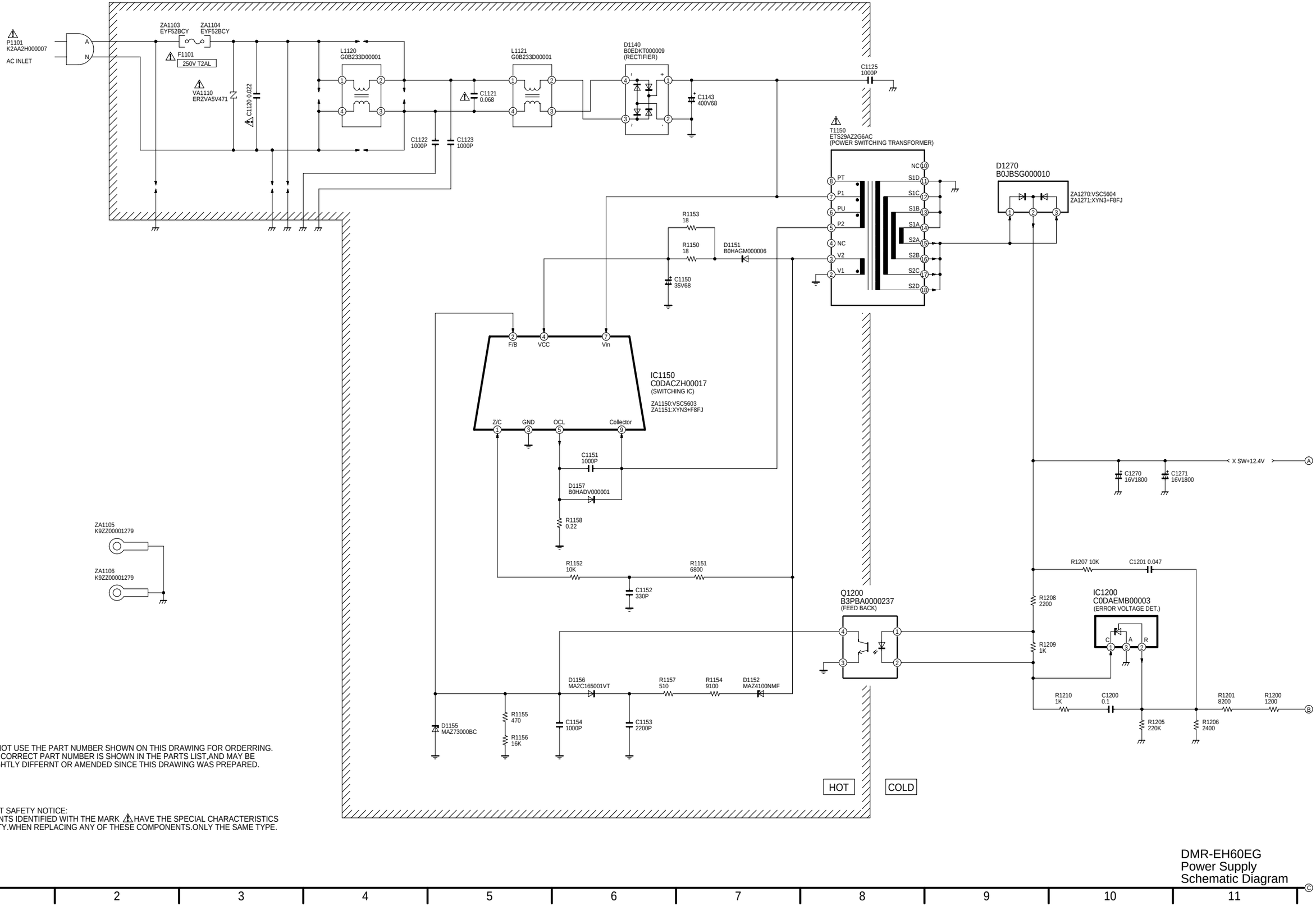
FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
Nicam Decoder
Schematic Diagram



ZA1105
K9ZZ00001279

ZA1106
K9ZZ00001279

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING.
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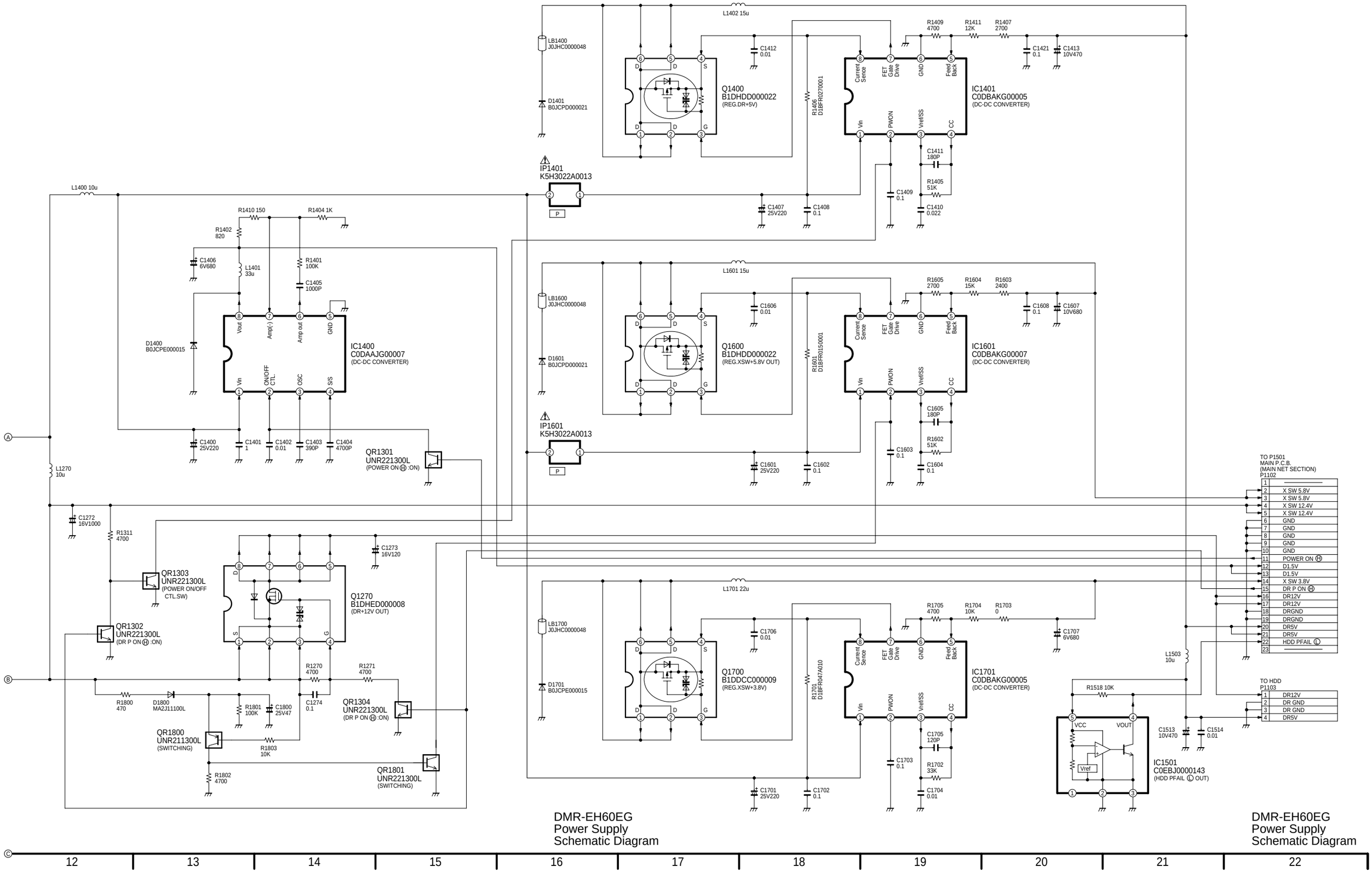
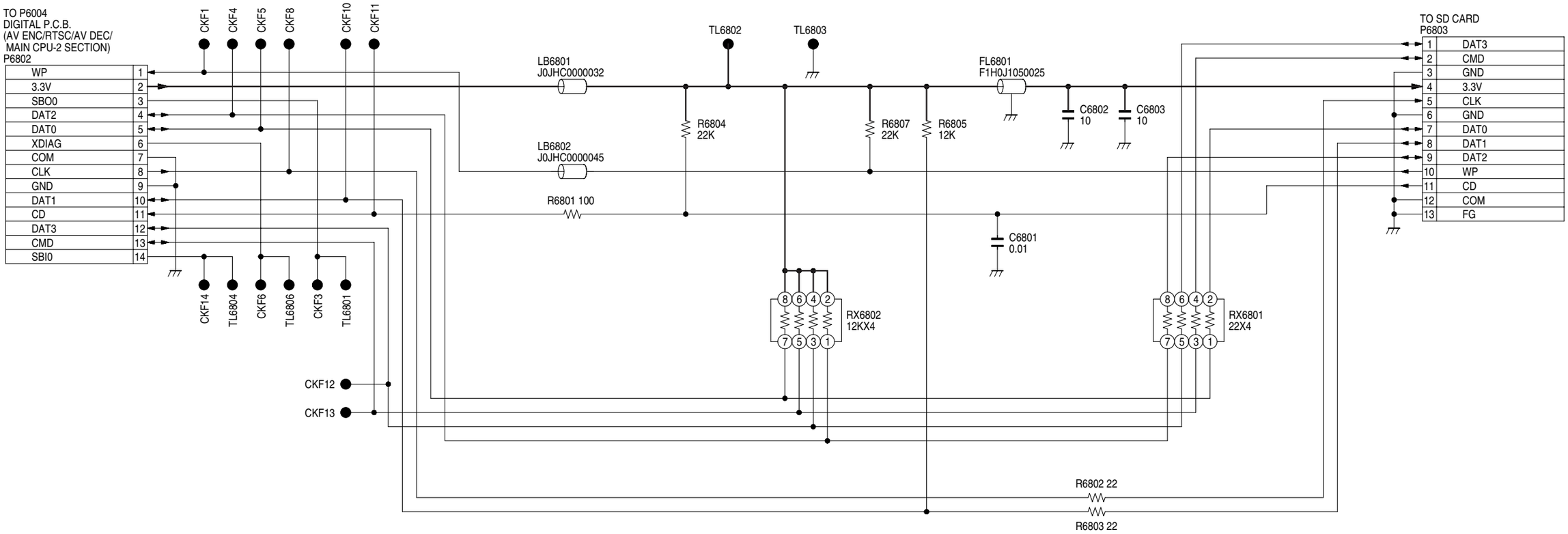
DMR-EH60EG
Power Supply
Schematic Diagram



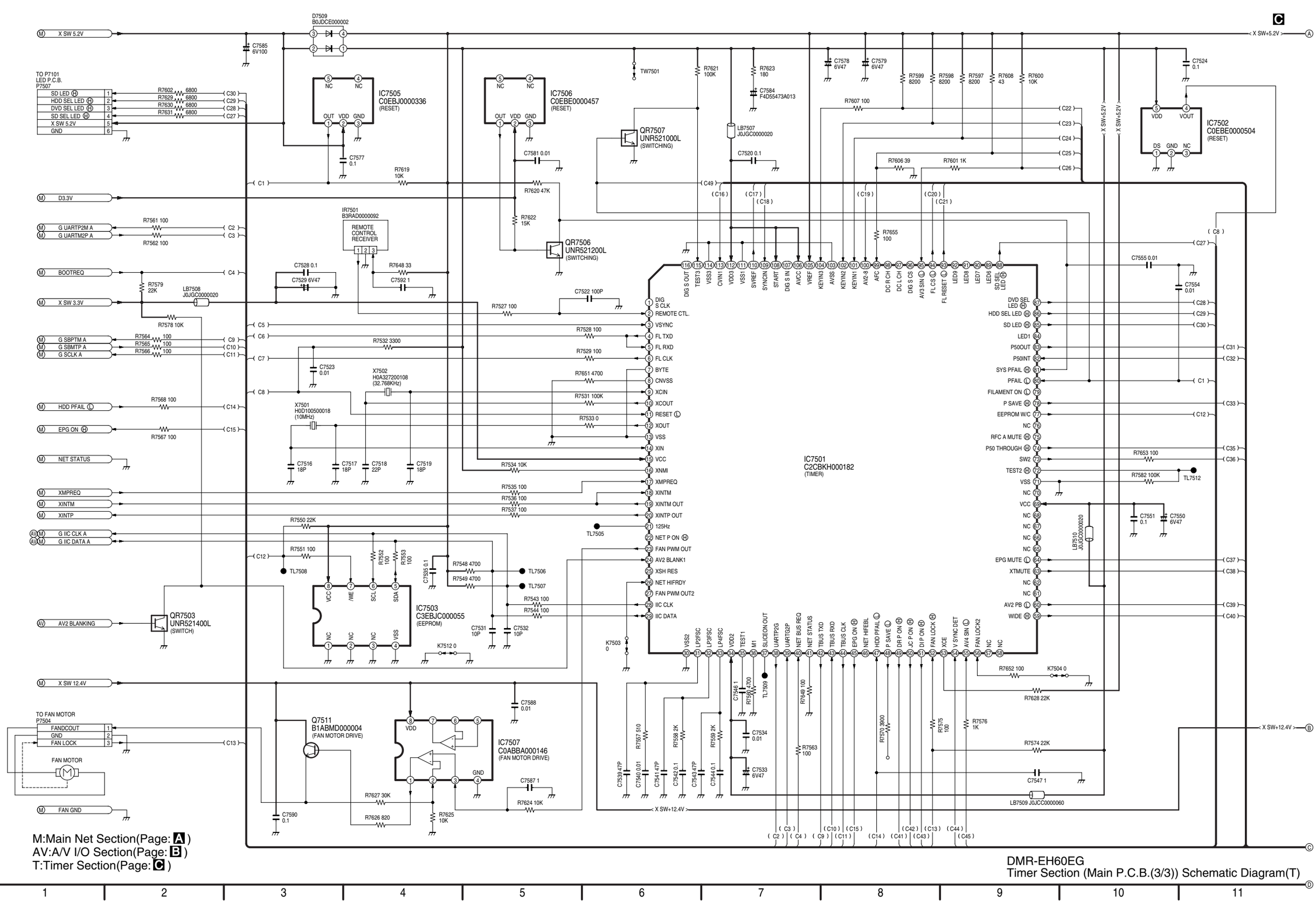
DMR-EH60EG
Power Supply
Schematic Diagram

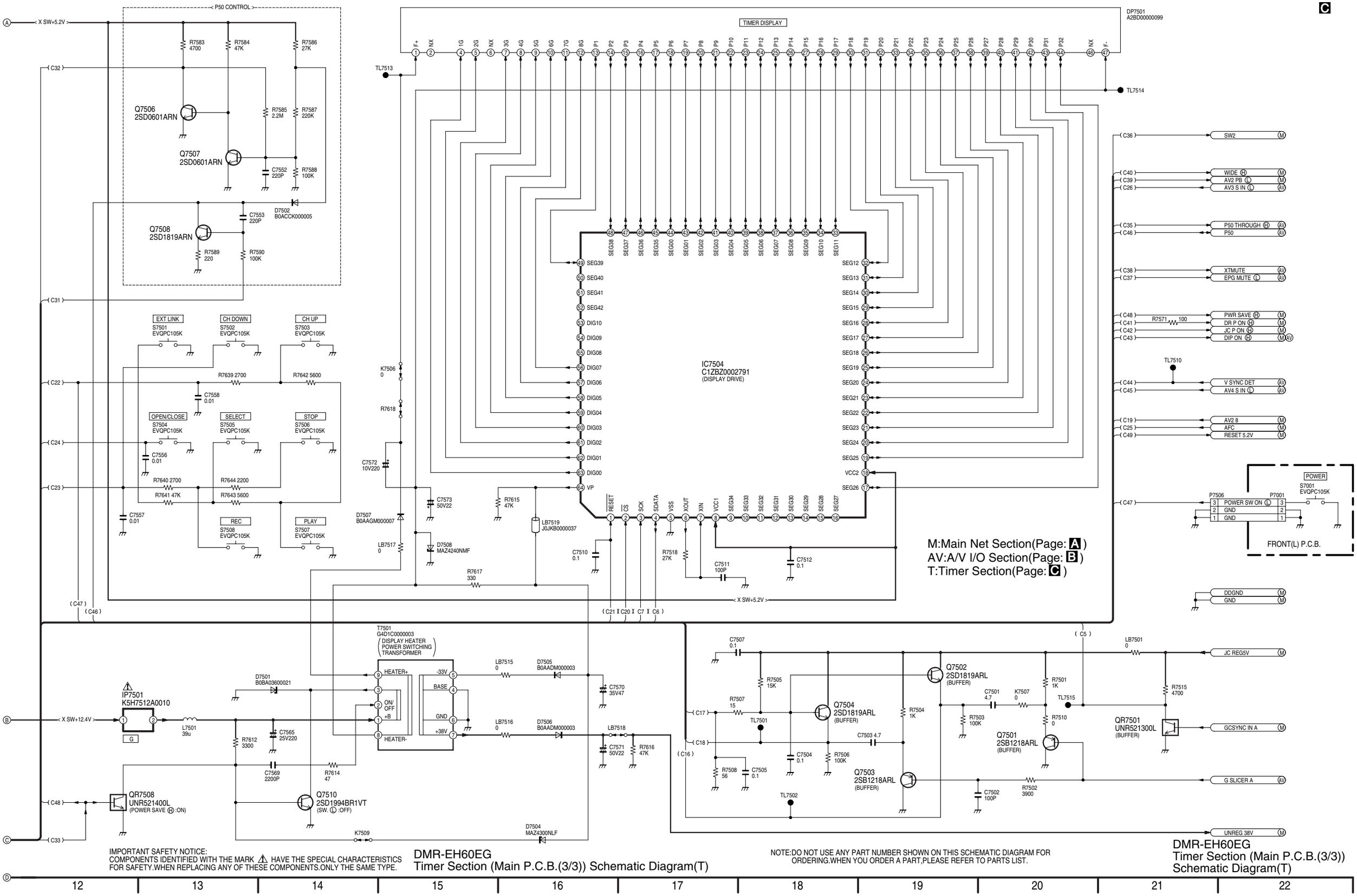
DMR-EH60EG
Power Supply
Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
SD Card
Schematic Diagram


C
X SW 5.2V
D7509 B0JDCE000002
C7585 6V100
TO P7101 LED P.C.B. P7507
SD LED H
HDD SEL LED H
DVD SEL LED H
SD SEL LED H
X SW 5.2V
GND
R7602 6800
R7629 6800
R7630 6800
R7631 6800
C30
C29
C28
C27
IC7505 C0EBJ0000336 (RESET)
C7577 0.1
IC7506 C0EBE0000457 (RESET)
C7581 0.01
TW7501
R7621 100K
R7623 180
C7584 F4D55473A013
QR7507 UNR521000L (SWITCHING)
LB7507 J0JGC0000020
C7520 0.1
C7578 6V47
C7579 6V47
R7599 8200
R7598 8200
R7597 8200
R7608 43
R7600 10K
C7524 0.1
IC7502 C0EBE0000504 (RESET)
R7607 100
R7606 39
R7601 1K
C22
C23
C24
C25
C26
X SW+5.2V
R7619 10K
C1
C49
C16
C17
C18
C19
C20
C21
D3.3V
G UARTP2M A
G UARTM2P A
R7561 100
R7562 100
C2
C3
IR7501 B3RAD0000092
REMOTE CONTROL RECEIVER
R7620 47K
R7622 15K
QR7506 UNR521200L (SWITCHING)
R7655 100
C8
C27
BOOTREQ
C4
C7528 0.1
C7529 6V47
R7648 33
C7592 1
C7555 0.01
C7554 0.01
X SW 3.3V
R7579 22K
LB7508 J0JGC0000020
R7578 10K
C7522 100P
R7527 100
G SBPTM A
G SBMTP A
G SCLK A
R7564 100
R7565 100
R7566 100
C9
C10
C11
C5
C6
C7
R7532 3300
C7523 0.01
X7502 H0A327200108 (32.768KHz)
C8
HDD PFAIL L
EPG ON H
R7568 100
R7567 100
C14
C15
X7501 H0D100500018 (10MHz)
C7516 18P
C7517 18P
C7518 22P
C7519 18P
NET STATUS
XMPREQ
XINTM
XINTP
G IIC CLK A
G IIC DATA A
R7550 22K
R7551 100
C12
TL7508
R7552 100
R7553 100
C7535 0.1
R7548 4700
R7549 4700
TL7506
TL7507
R7543 100
R7544 100
C7531 10P
C7532 10P
IC7503 C3EBJC000055 (EEPROM)
K7512 0
K7503 0
AV2 BLANKING
QR7503 UNR521400L (SWITCH)
X SW 12.4V
TO FAN MOTOR P7504
FANDCOUT
GND
FAN LOCK
C13
FAN MOTOR
FAN GND
Q7511 B1ABMD000004 (FAN MOTOR DRIVE)
C7588 0.01
IC7507 C0ABBA000146 (FAN MOTOR DRIVE)
C7587 1
R7624 10K
R7627 30K
R7626 820
R7625 10K
C7590 0.1
R7534 10K
R7535 100
R7536 100
R7537 100
TL7505
R7528 100
R7529 100
R7651 4700
R7531 100K
R7533 0
IC7501 C2CBKH000182 (TIMER)
TL7512
R7582 100K
R7653 100
C7551 0.1
C7550 6V47
LB7510 J0JGC0000020
R7652 100
K7504 0
R7628 22K
R7574 22K
C7547 1
LB7509 J0JGC0000060
R7546 1
R7560 4700
TL7509
R7649 100
R7563 100
C7534 0.01
C7533 6V47
R7557 510
R7558 2K
R7559 2K
R7575 100
R7576 1K
R7570 3900
C7539 47P
C7540 0.001
C7541 47P
C7542 0.1
C7543 47P
C7544 0.1
X SW+12.4V
M:Main Net Section(Page: A)
AV:A/V I/O Section(Page: B)
T:Timer Section(Page: C)
DMR-EH60EG
Timer Section (Main P.C.B.(3/3)) Schematic Diagram(T)



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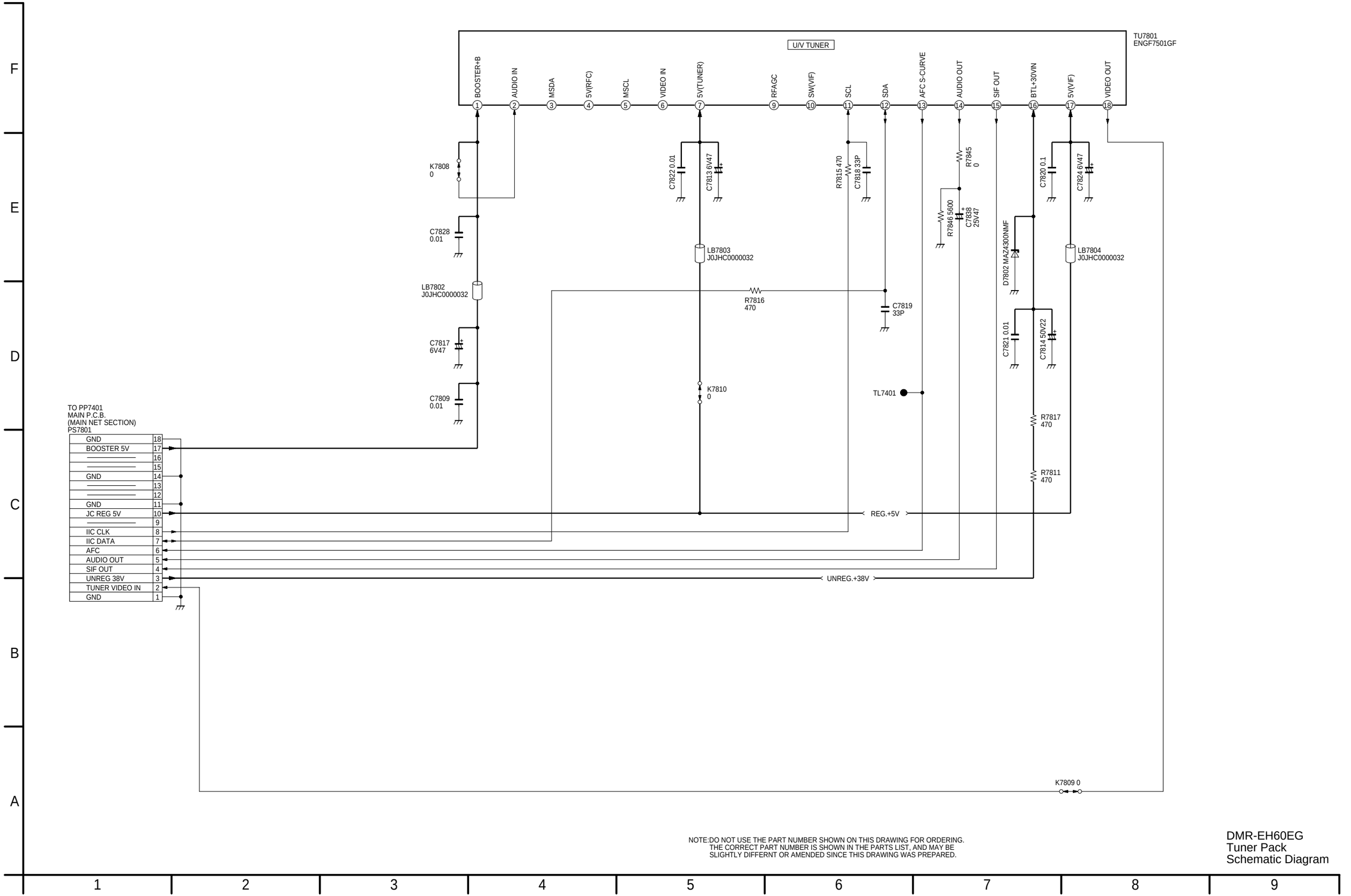
DMR-EH60EG
Timer Section (Main P.C.B.(3/3)) Schematic Diagram(T)

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
Timer Section (Main P.C.B.(3/3)) Schematic Diagram(T)



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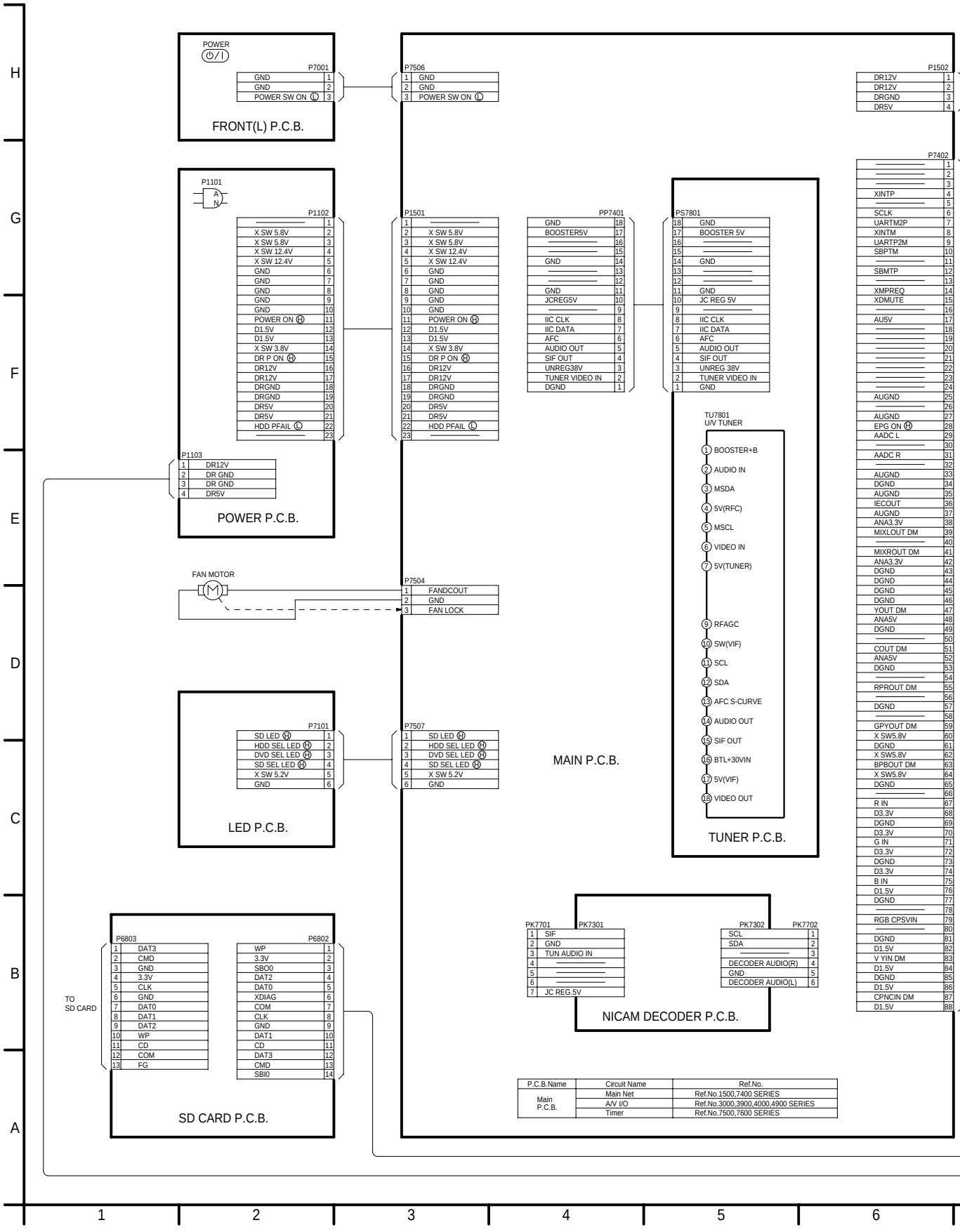
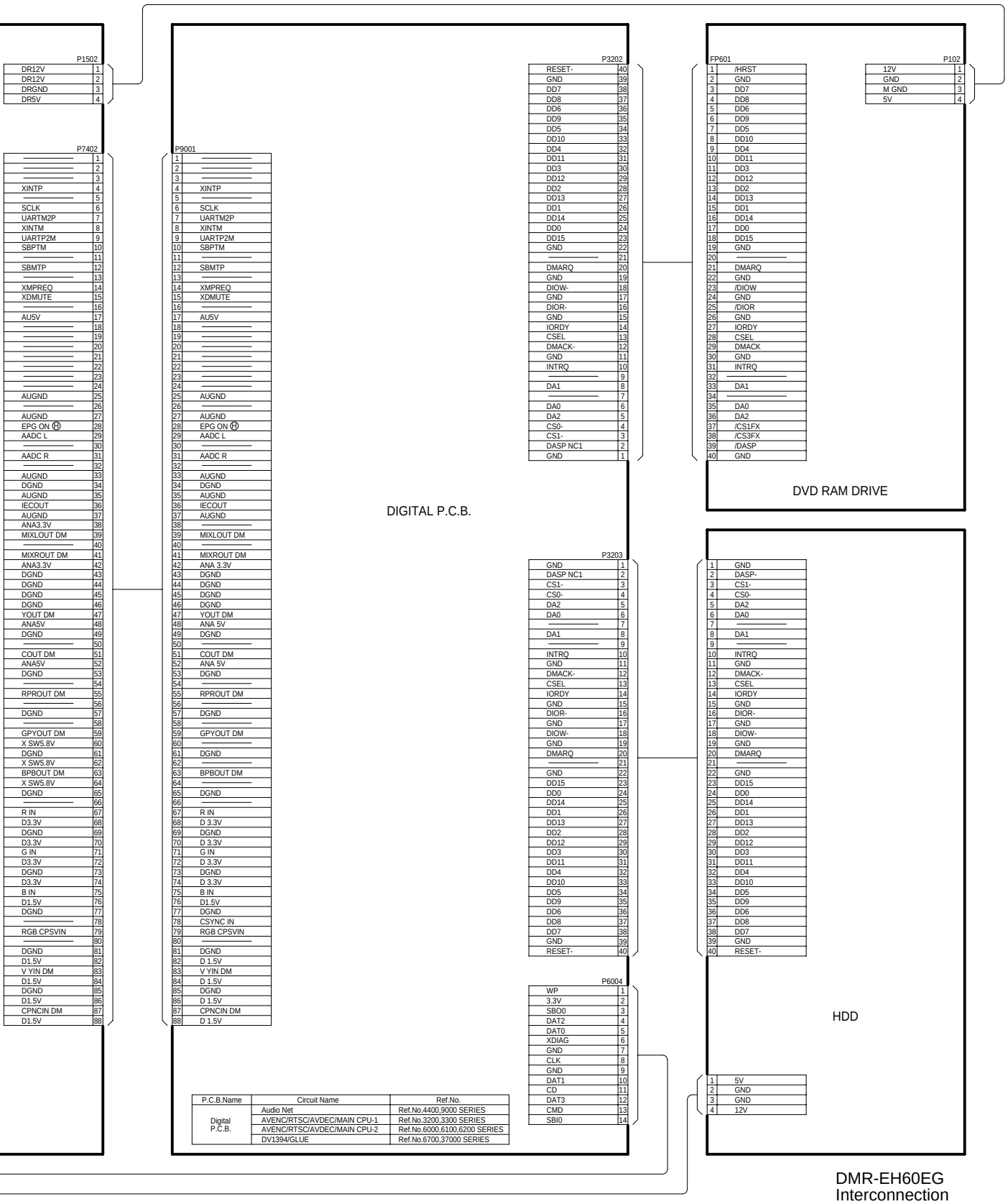
DMR-EH60EG
Tuner Pack
Schematic Diagram

18 Schematic Diagram

18.1. Interconnection Schematic Diagram



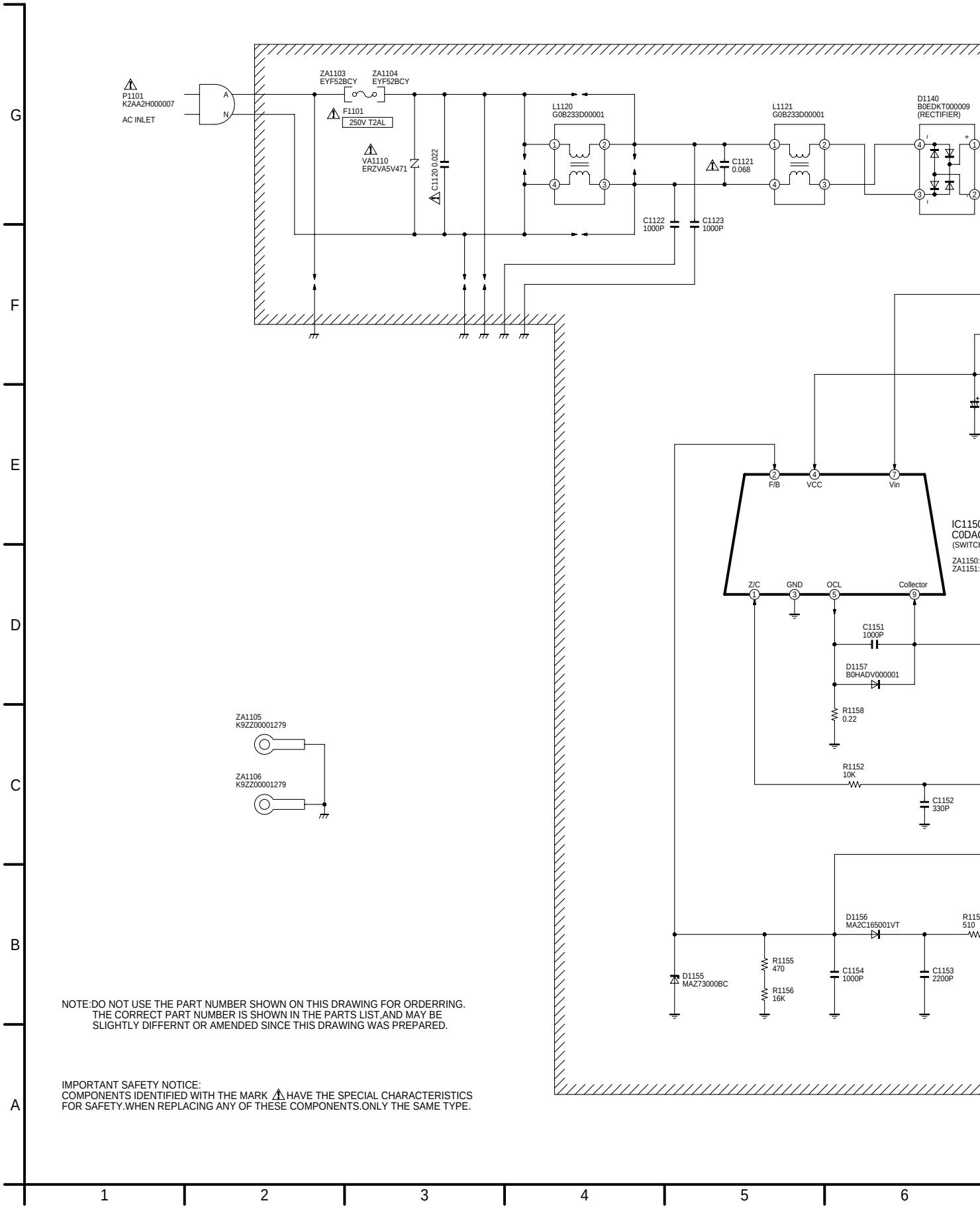


P.C.B.Name	Circuit Name	Ref.No.
Digital P.C.B.	Audio Net	Ref.No.4400,9000 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-1	Ref.No.3200,3300 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-2	Ref.No.6000,6100,6200 SERIES
	DV1394/GLUE	Ref.No.6700,37000 SERIES

DMR-EH60EG
Interconnection
Schematic Diagram

6 7 8 9 10 11 12

18.2. Power Supply Schematic Diagram



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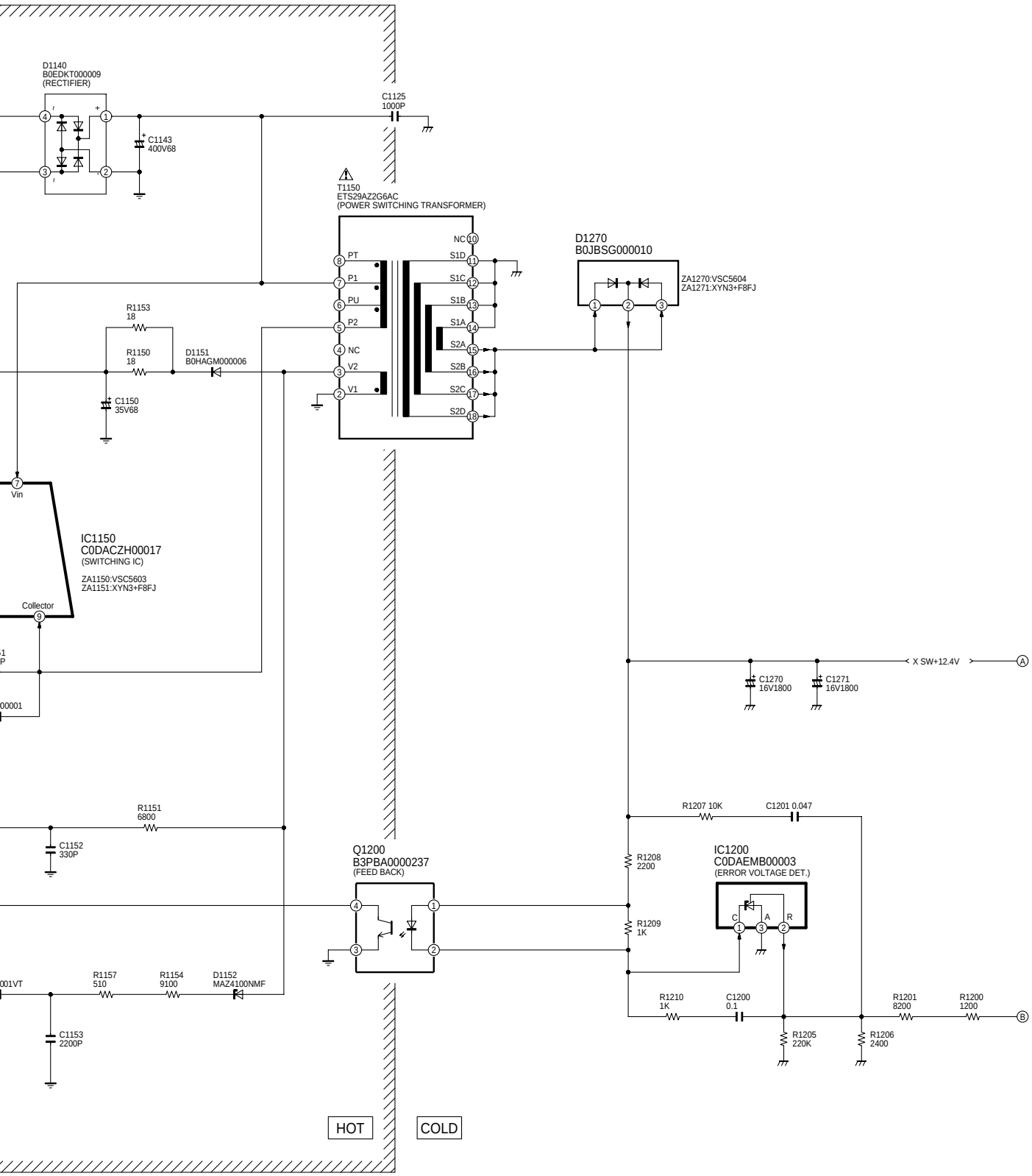
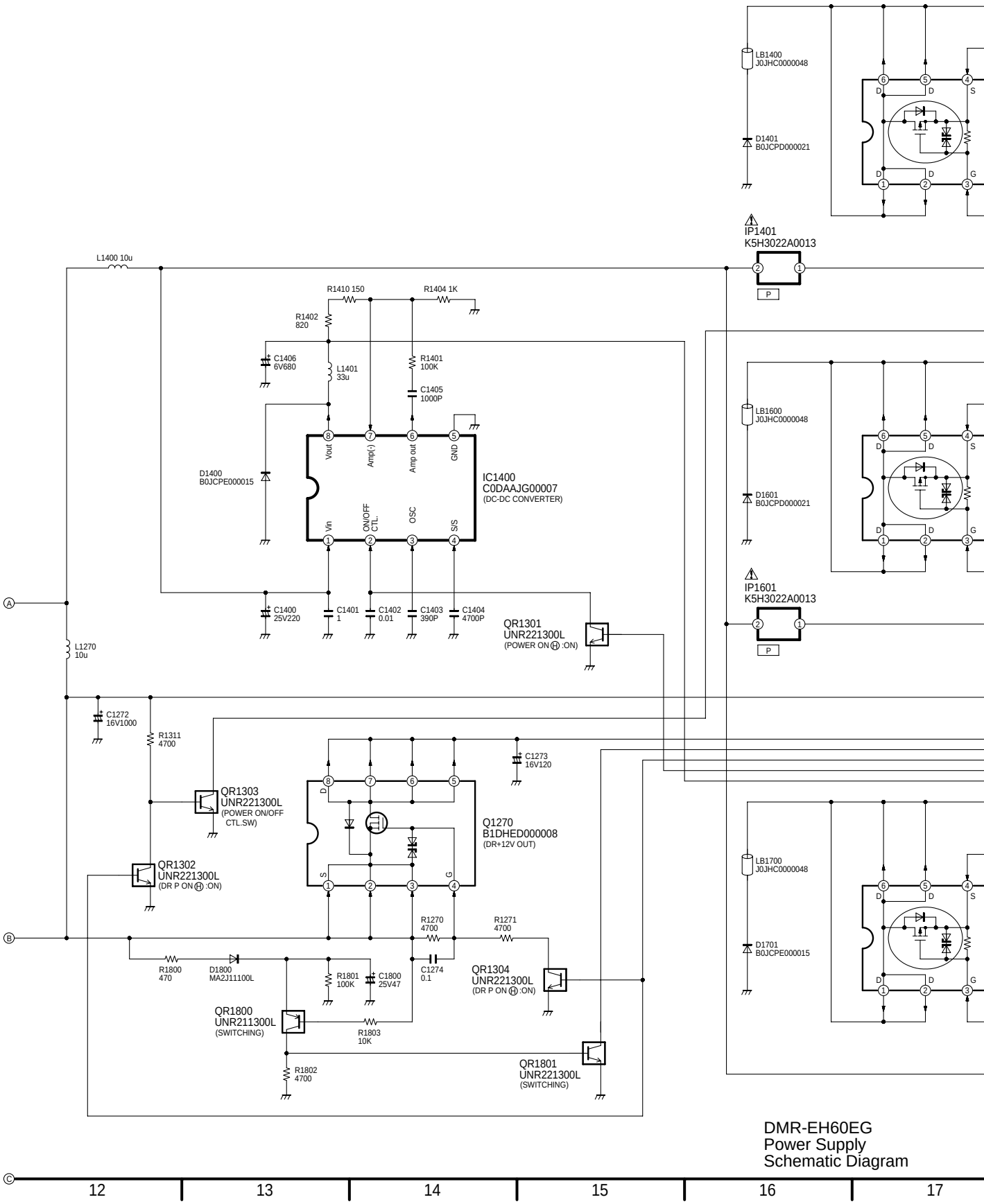
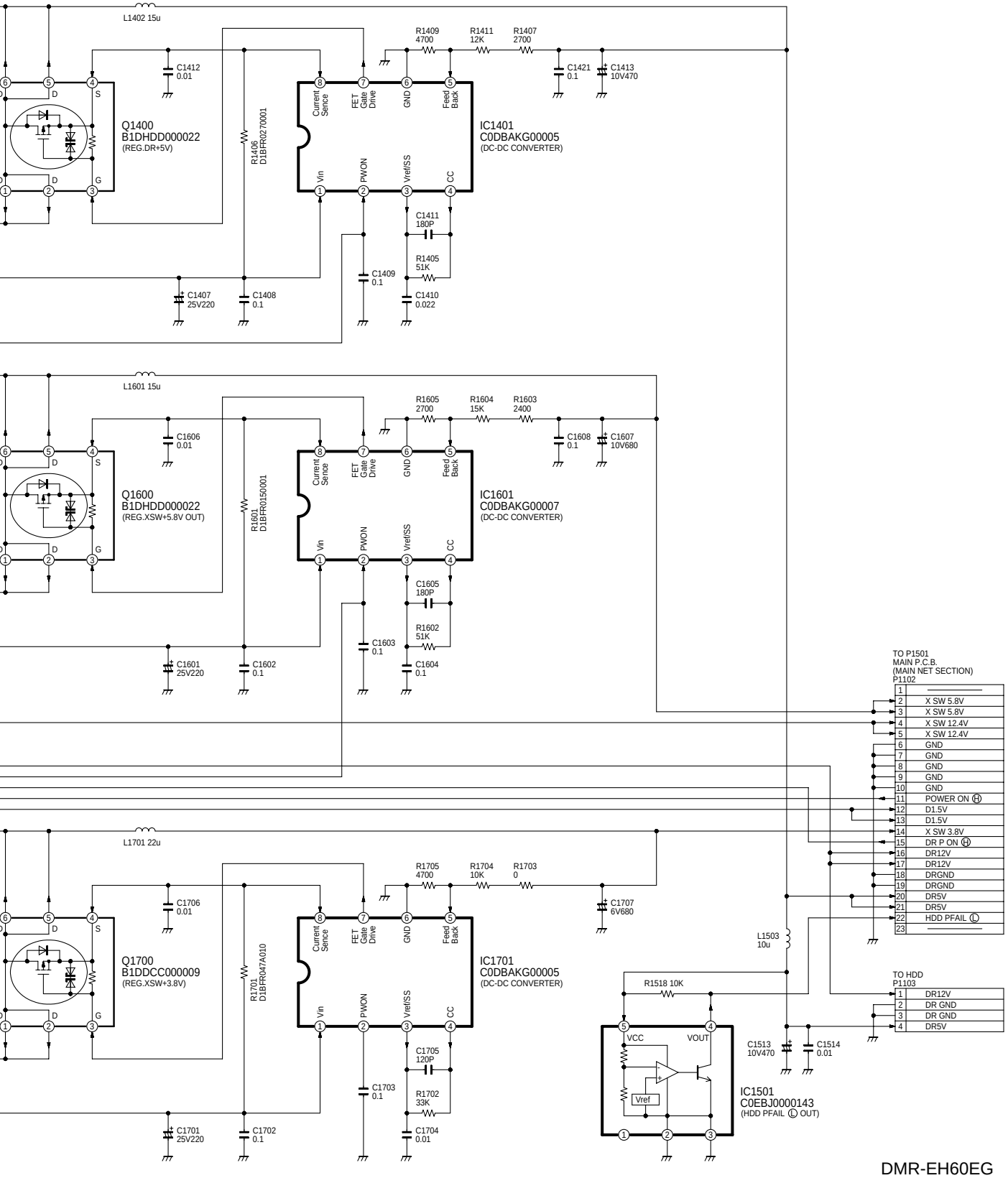


DMR-EH60EG
Power Supply
Schematic Diagram

6 | 7 | 8 | 9 | 10 | 11



DMR-EH60EG
Power Supply
Schematic Diagram

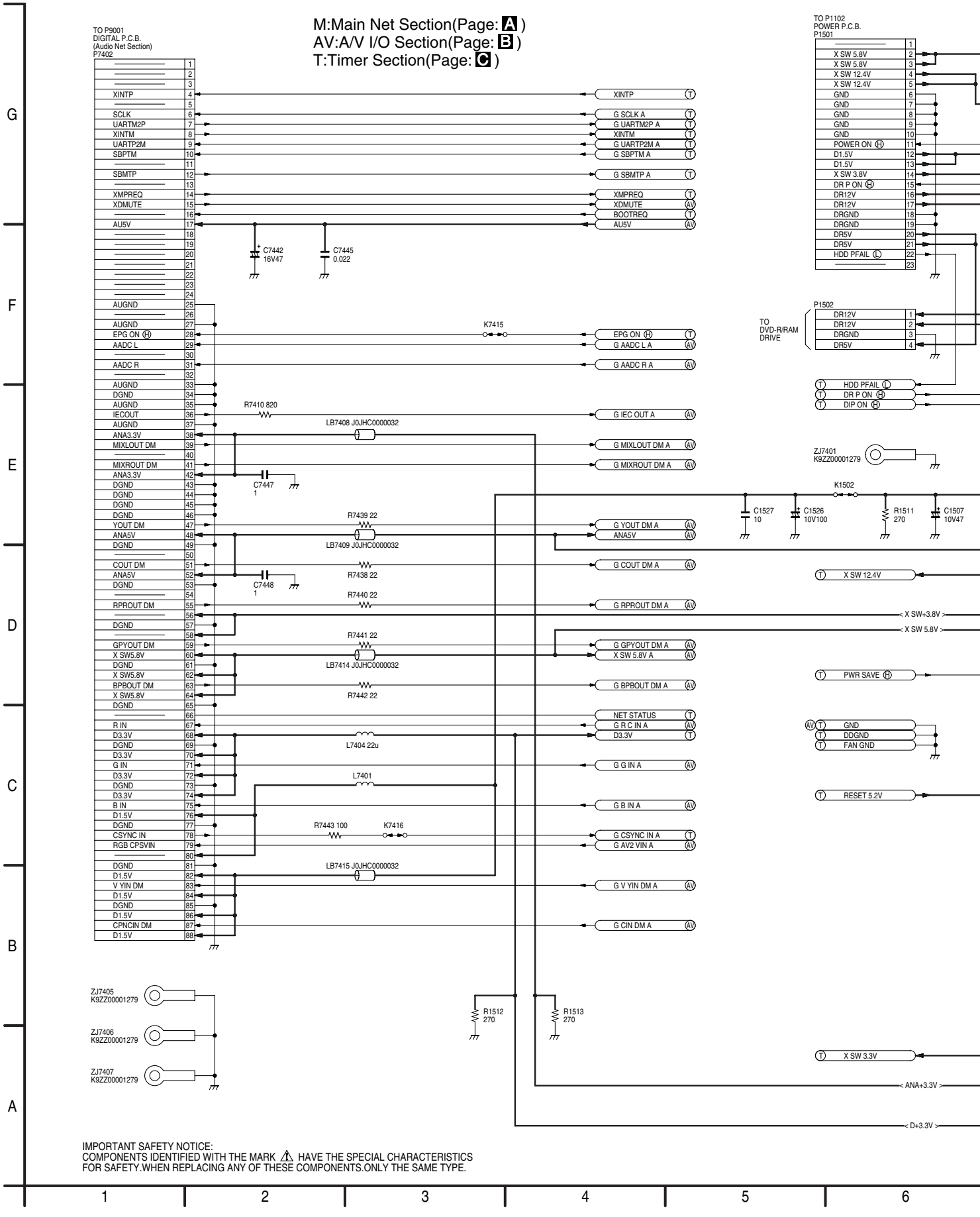


DMR-EH60EG
Power Supply
Schematic Diagram

ram

17	18	19	20	21	22

18.3. Main Net Section (Main P.C.B. (1/3)) Schematic Diagram (M)



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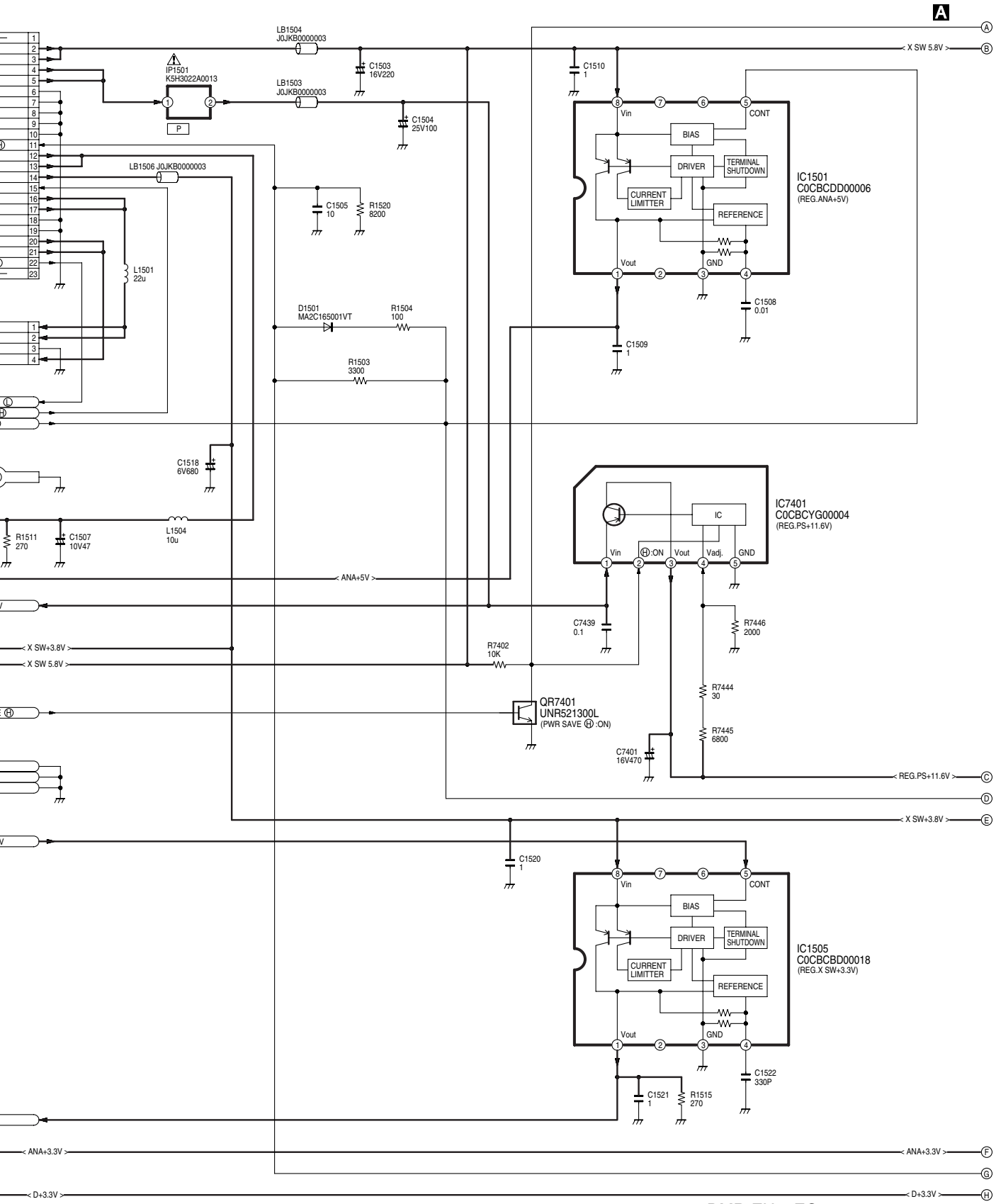
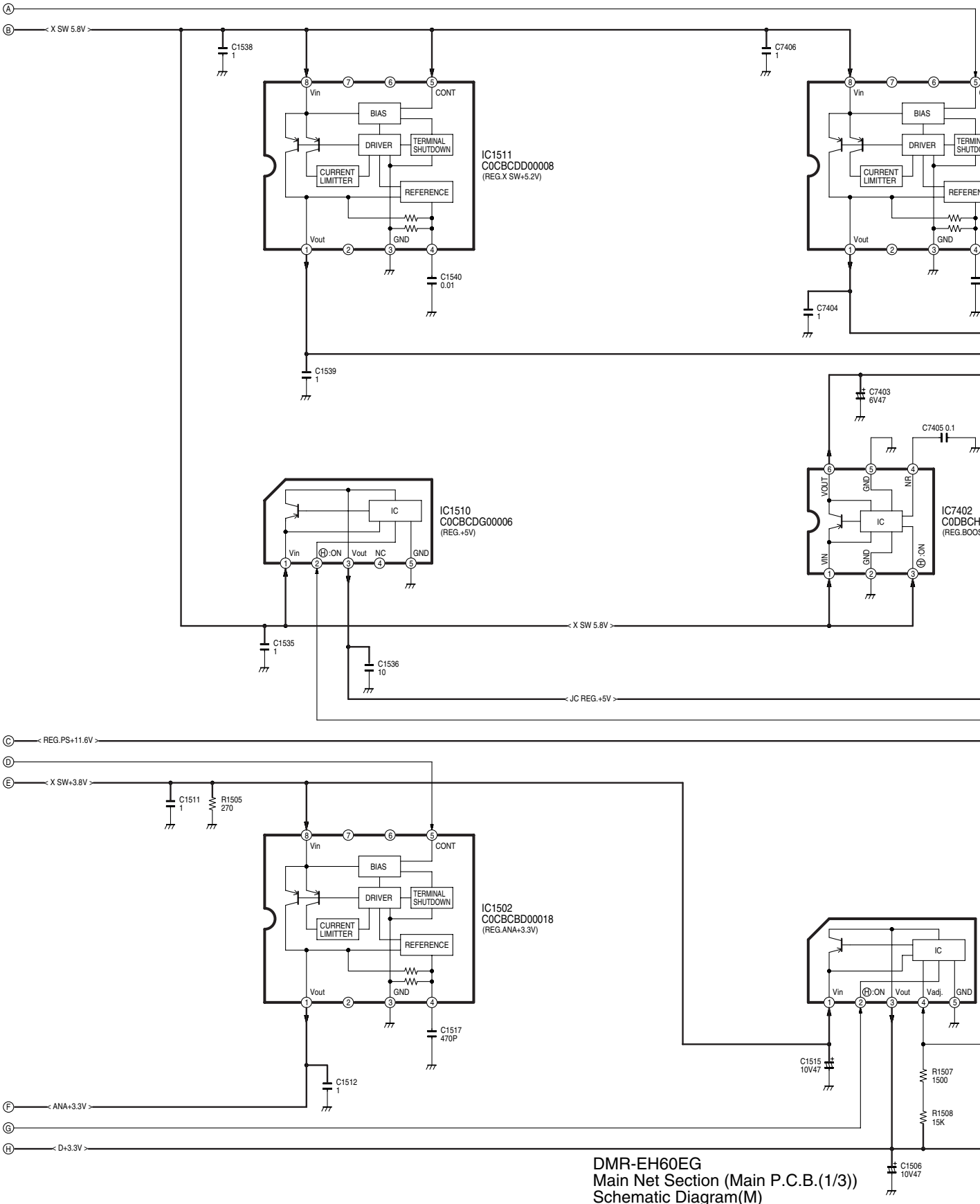
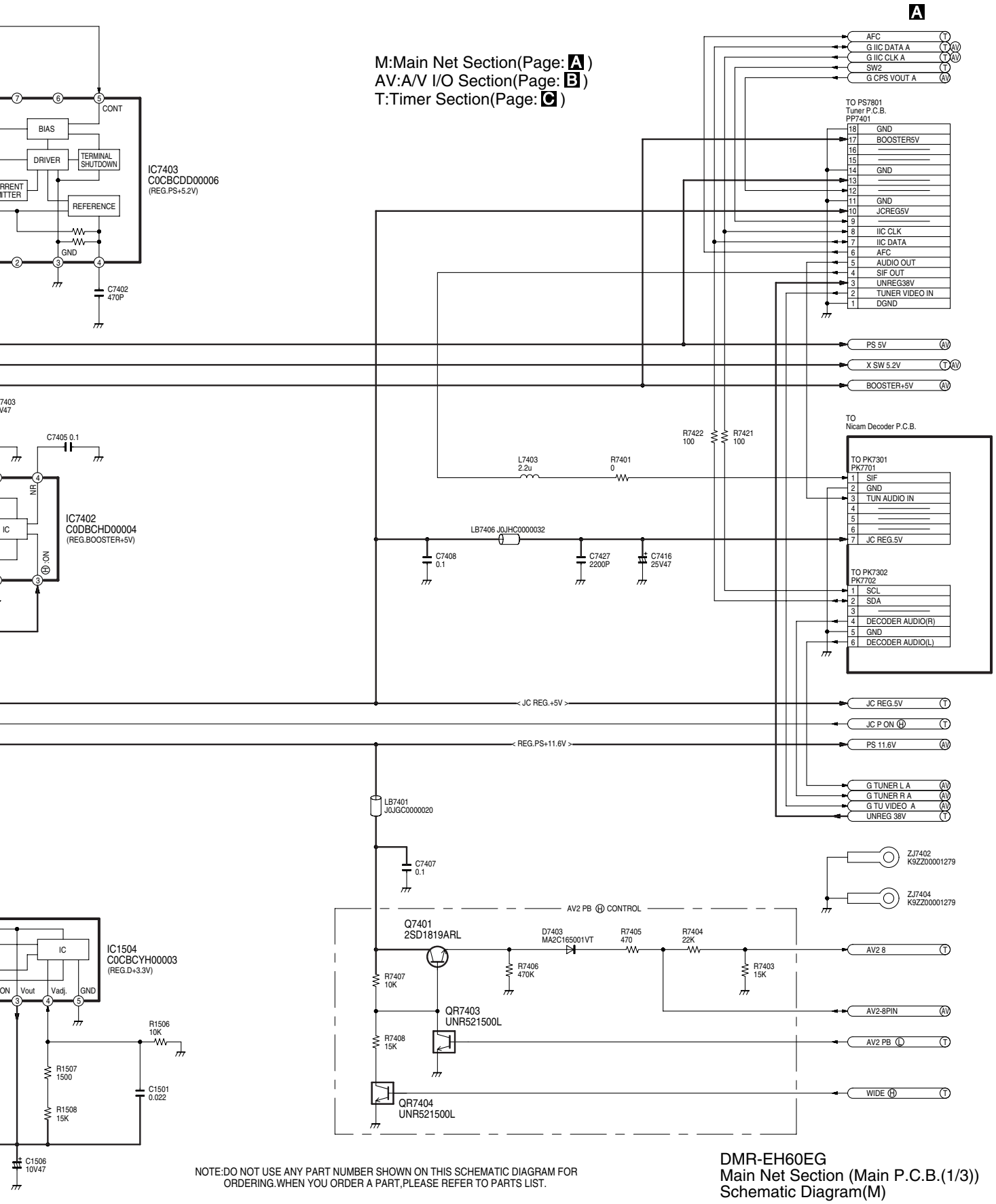


DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)

6 | 7 | 8 | 9 | 10 | 11



DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)



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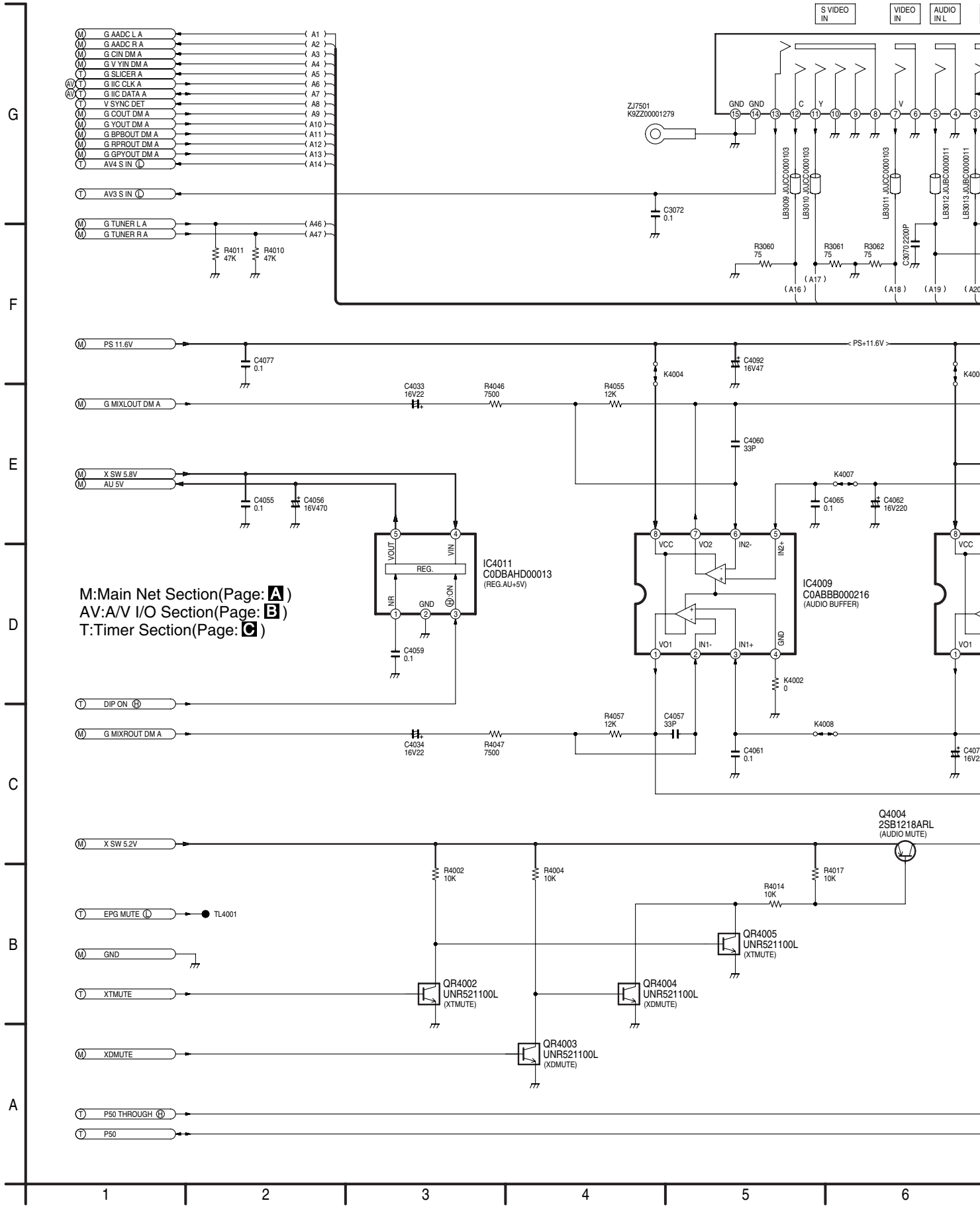
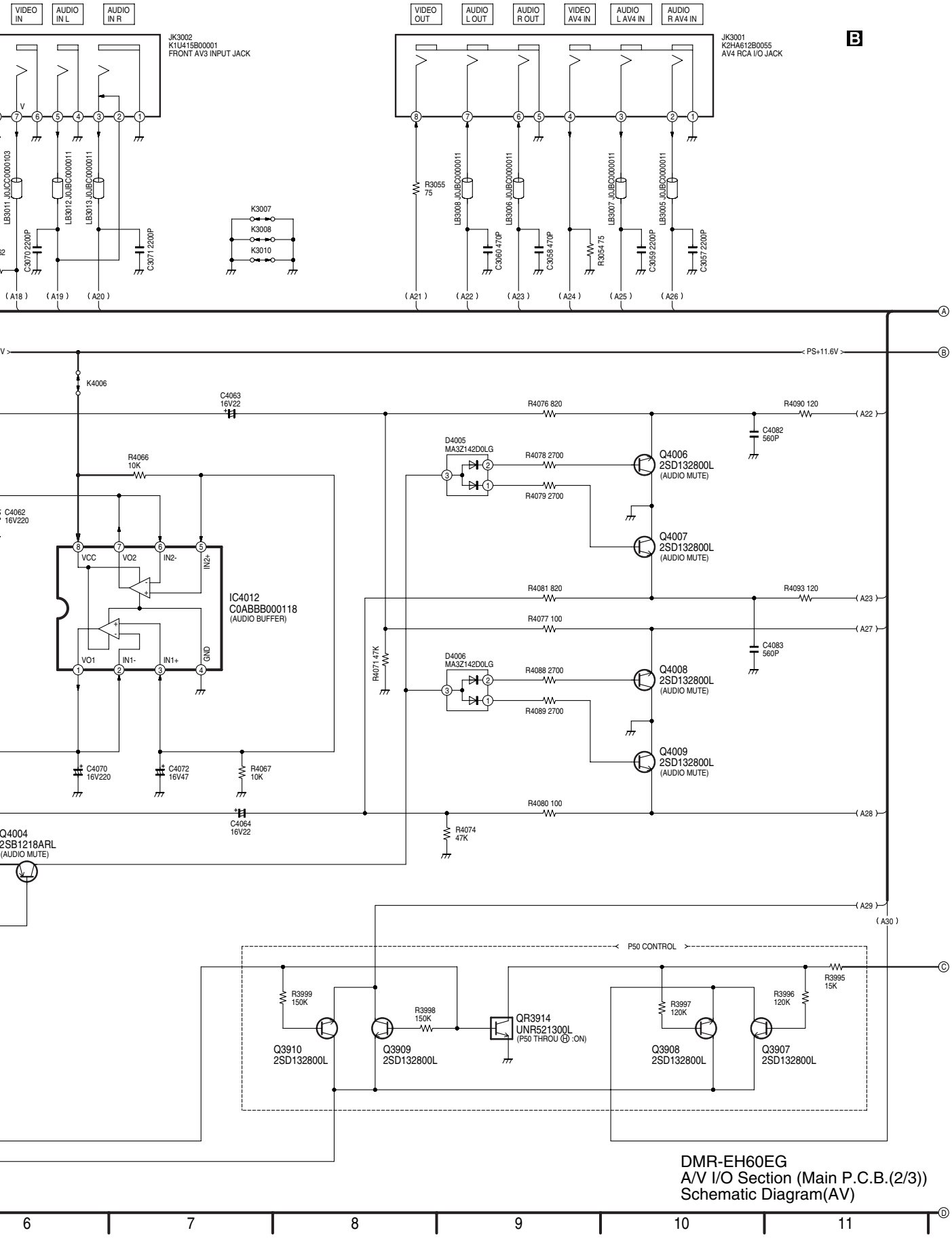
DMR-EH60EG
Main Net Section (Main P.C.B.(1/3))
Schematic Diagram(M)

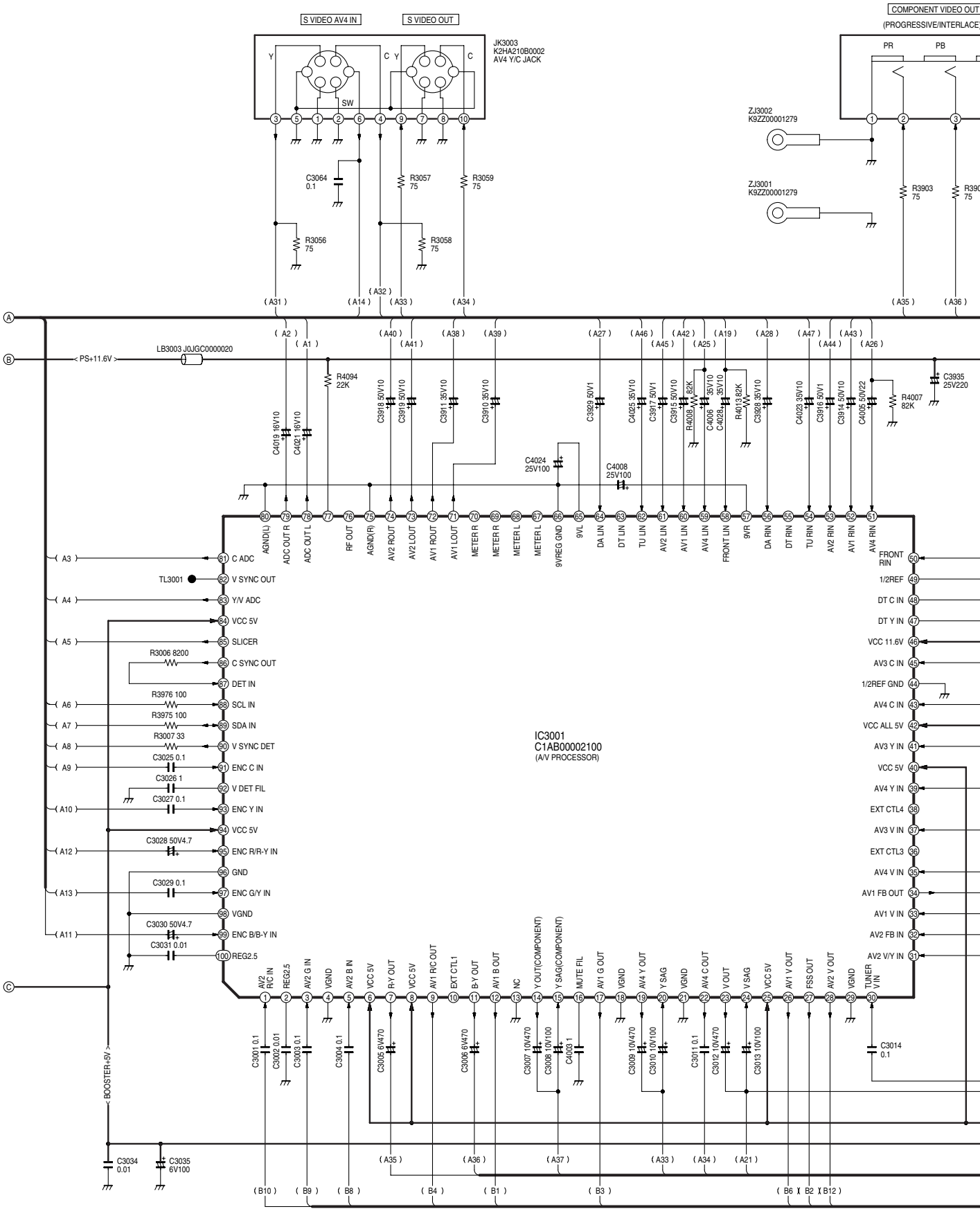
17	18	19	20	21	22

18.4. A/V I/O Section (Main P.C.B. (2/3)) Schematic Diagram (AI)

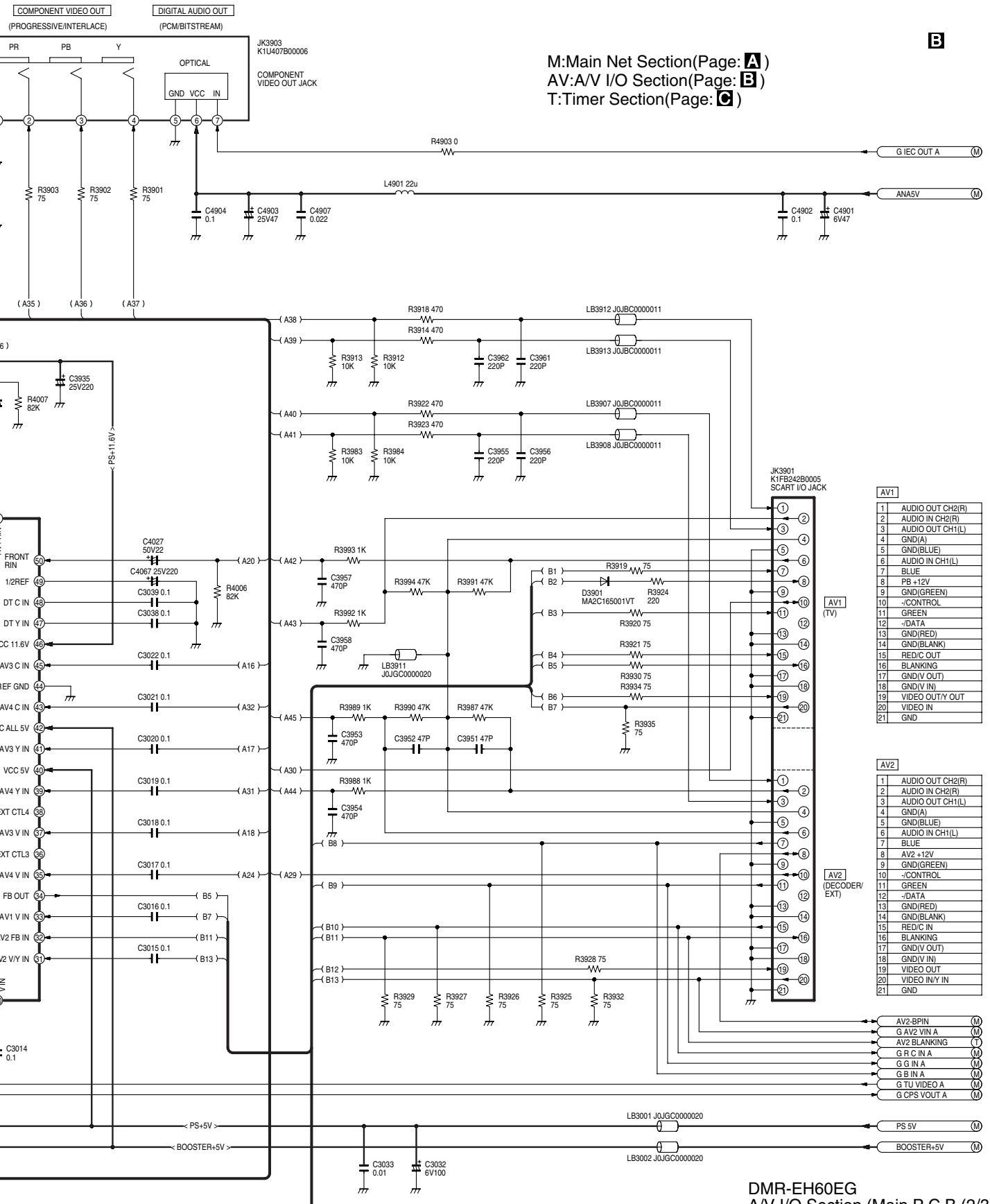




DMR-EH60EG
A/V I/O Section (Main P.C.B.(2/3))
Schematic Diagram(AV)



DMR-EH60EG A/V I/O Section (Main P.C.B.(2/3)) Schematic Diagram(AV)



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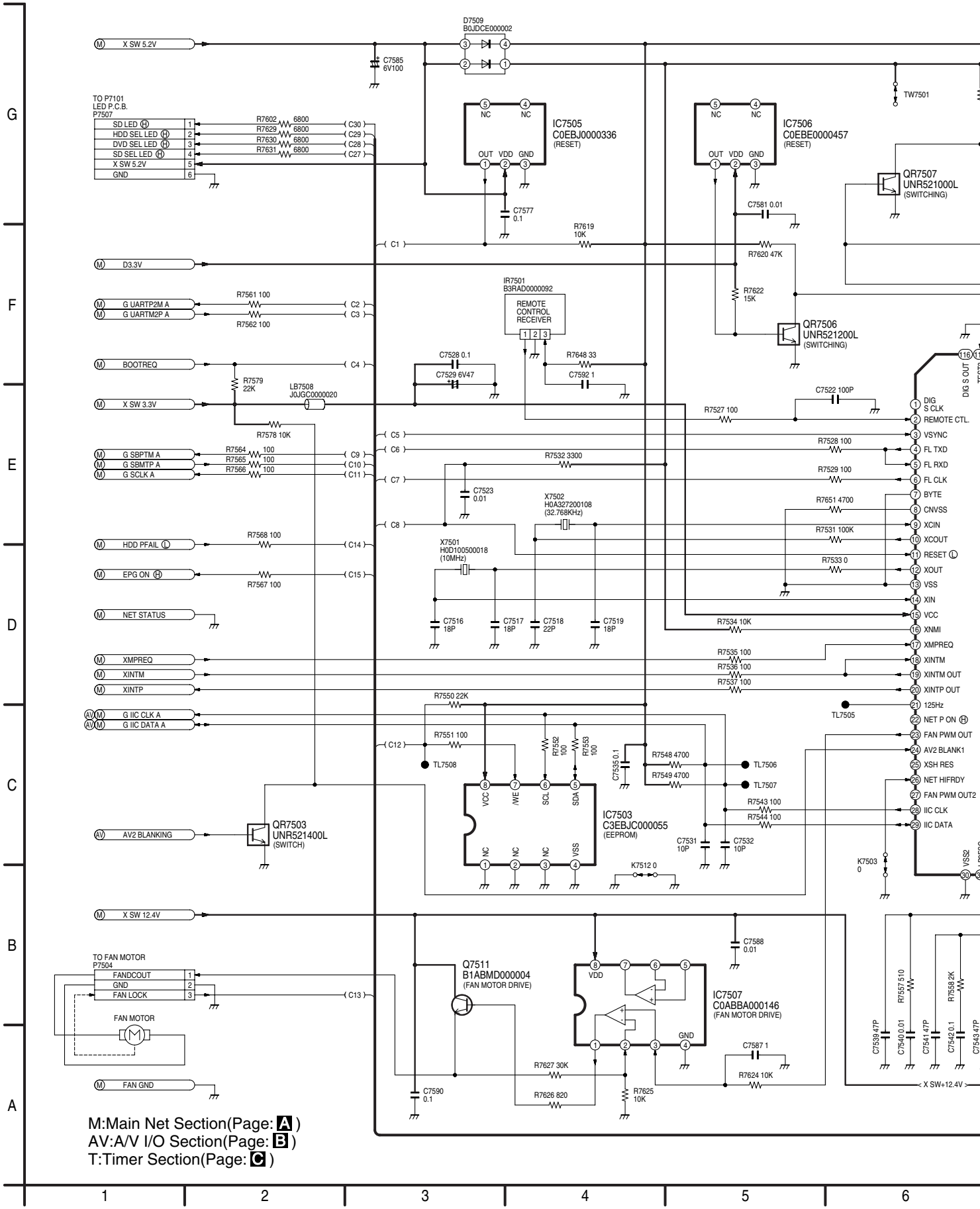
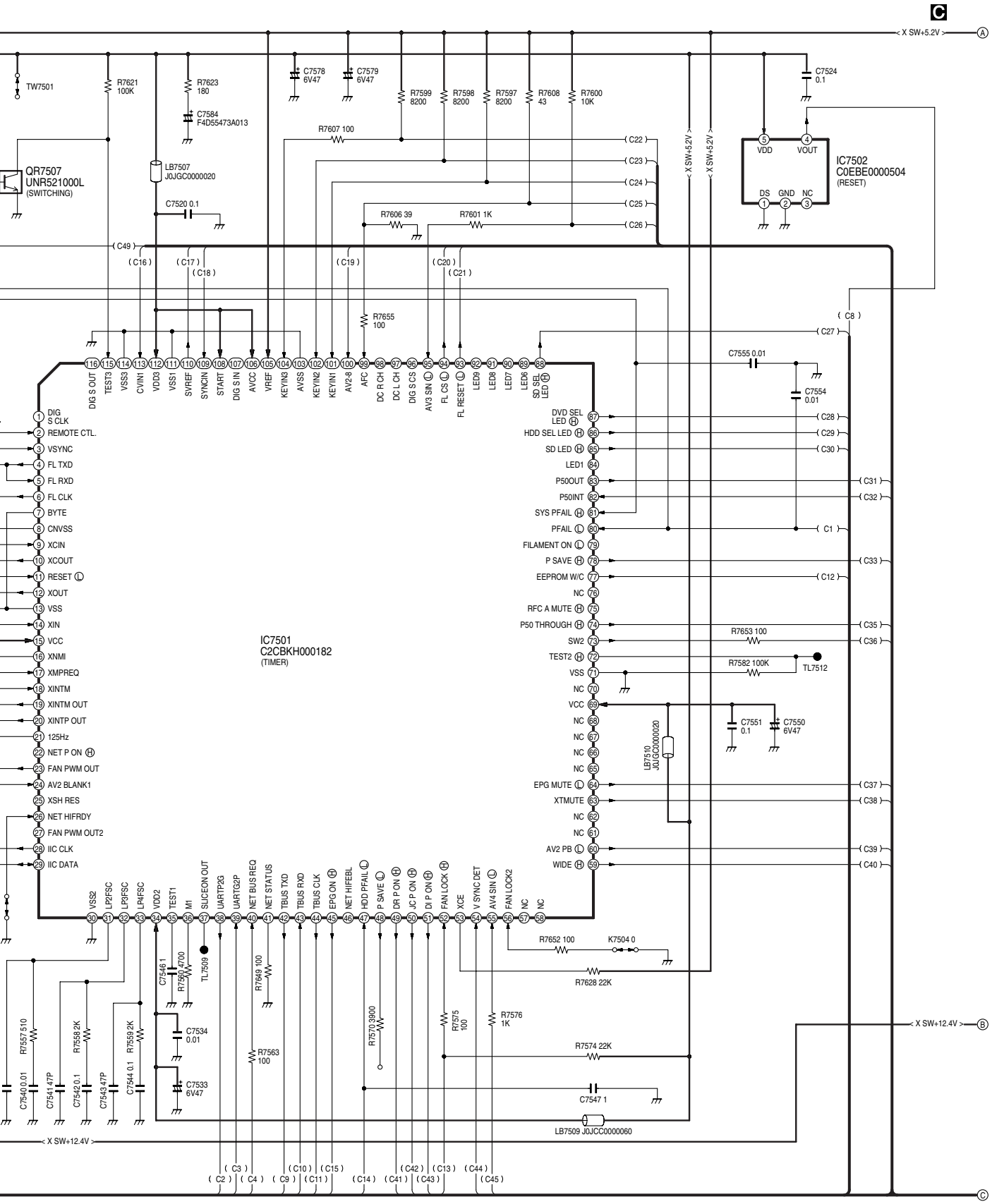
DMR-EH60EG
A/V I/O Section (Main P.C.B.(2/3))
Schematic Diagram(AV)

Diagram(AV)

17	18	19	20	21	22

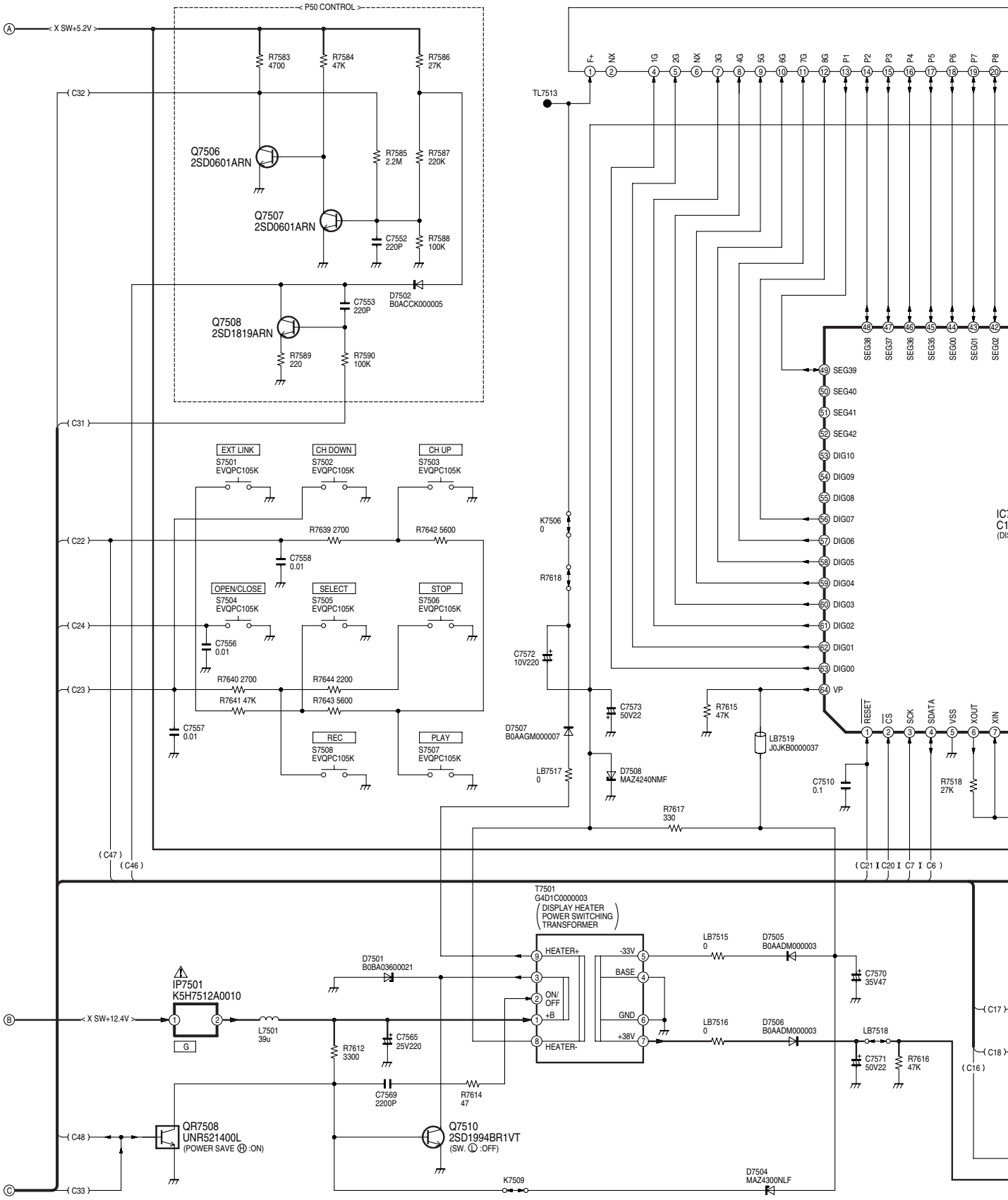
18.5. Timer Section (Main P.C.B. (3/3)) Schematic Diagram (T)





DMR-EH60EG
Timer Section (Main P.C.B.(3/3)) Schematic Diagram(T)

6 | 7 | 8 | 9 | 10 | 11



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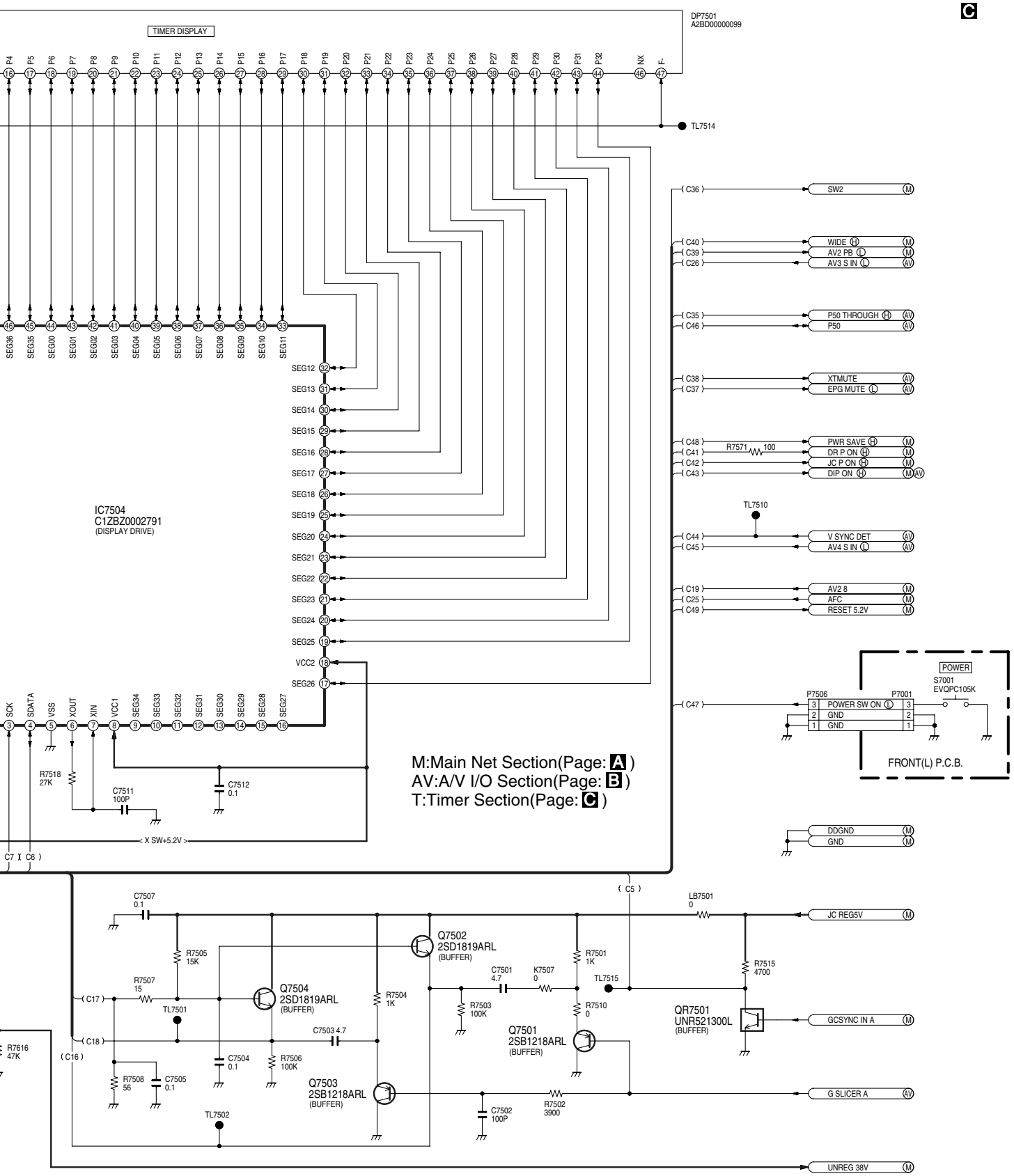
DMR-EH60EG
Timer Section (Main P.C.B.(3/3)) Schematic Diagram(T)

12 | 13 | 14 | 15 | 16 | 17



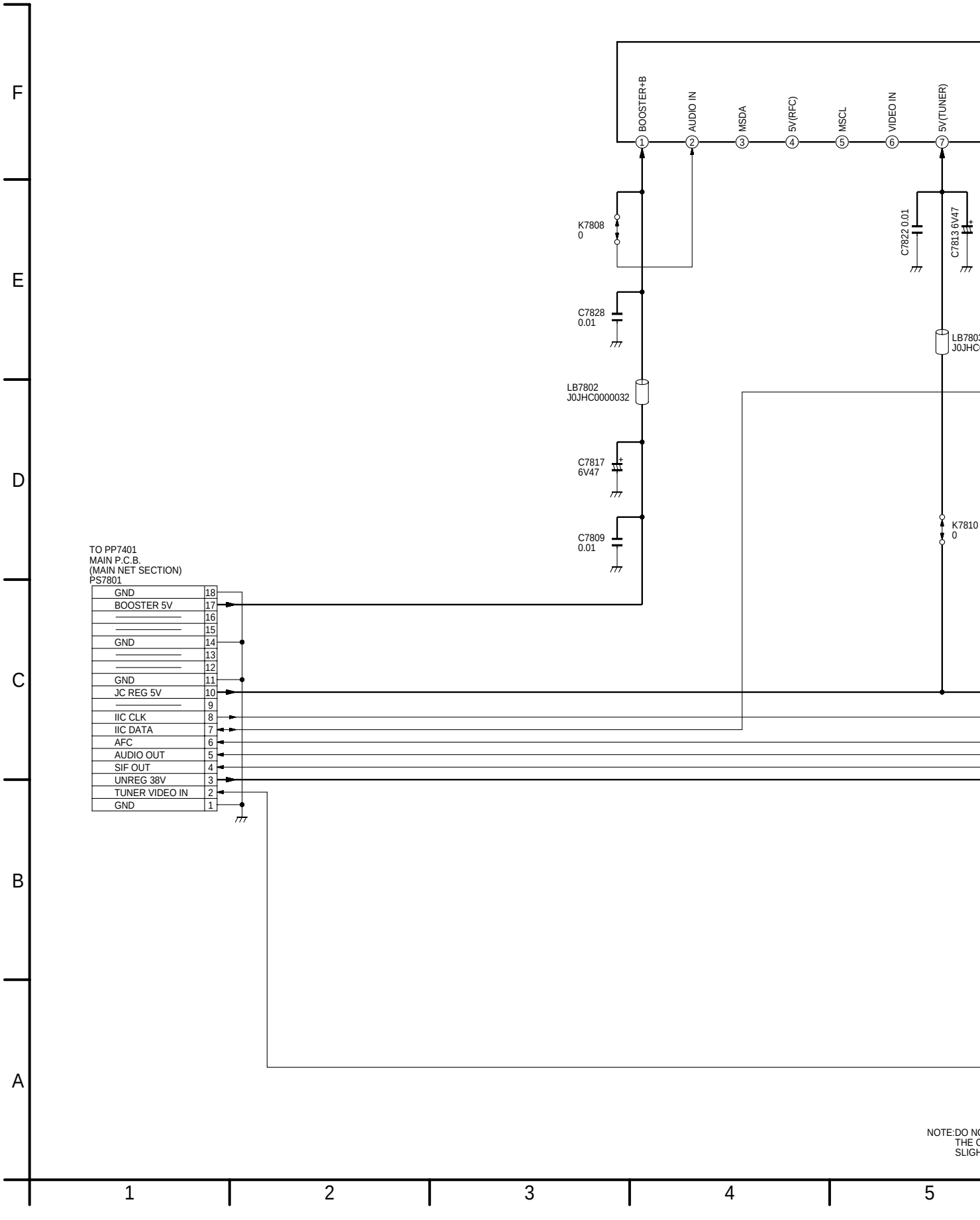
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

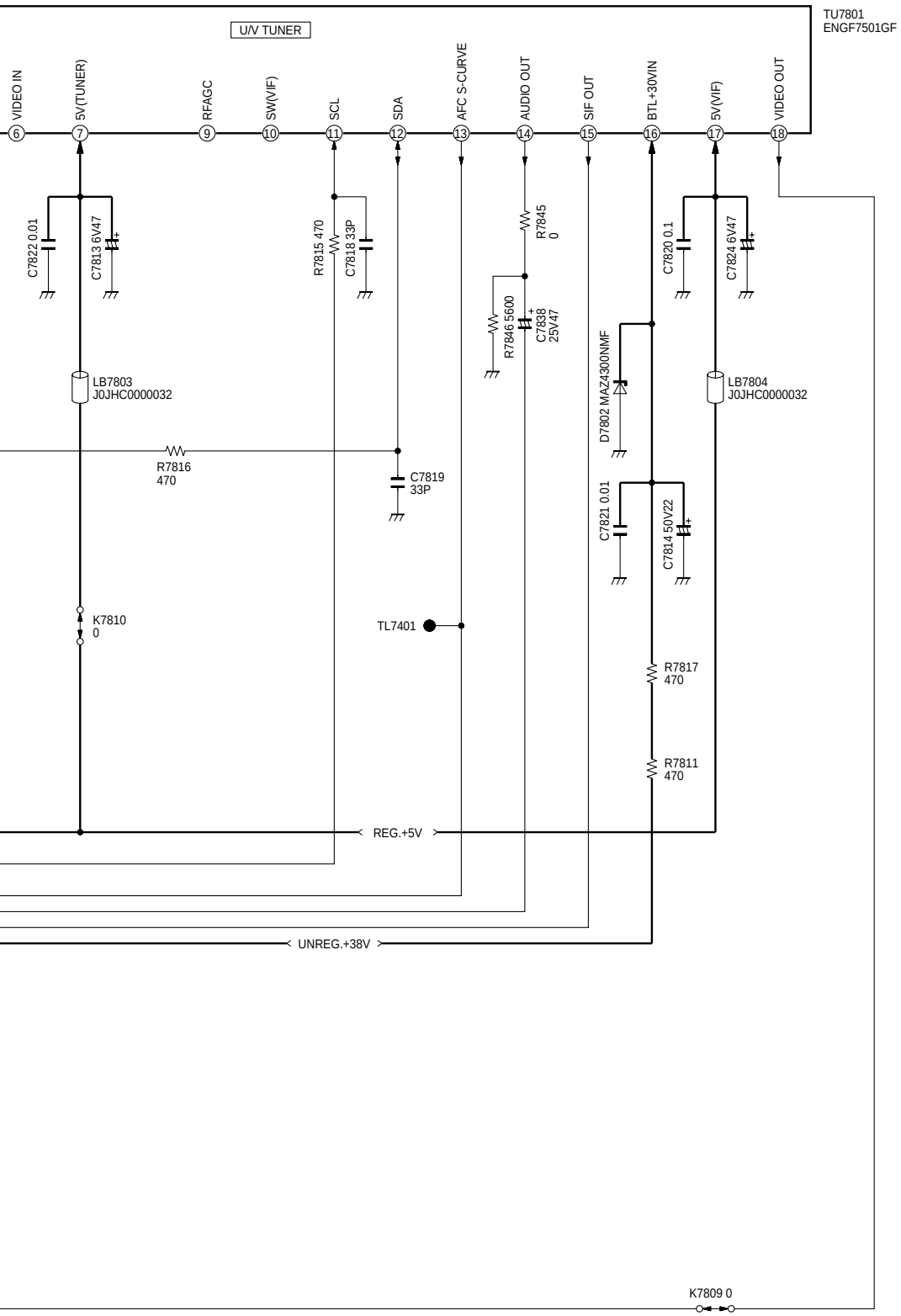
DMR-EH60EG
Timer Section (Main P.C.B.(3/3))
Schematic Diagram(T)

tic Diagram(T)

17 | 18 | 19 | 20 | 21 | 22

18.6. Tuner Pack Schematic Diagram





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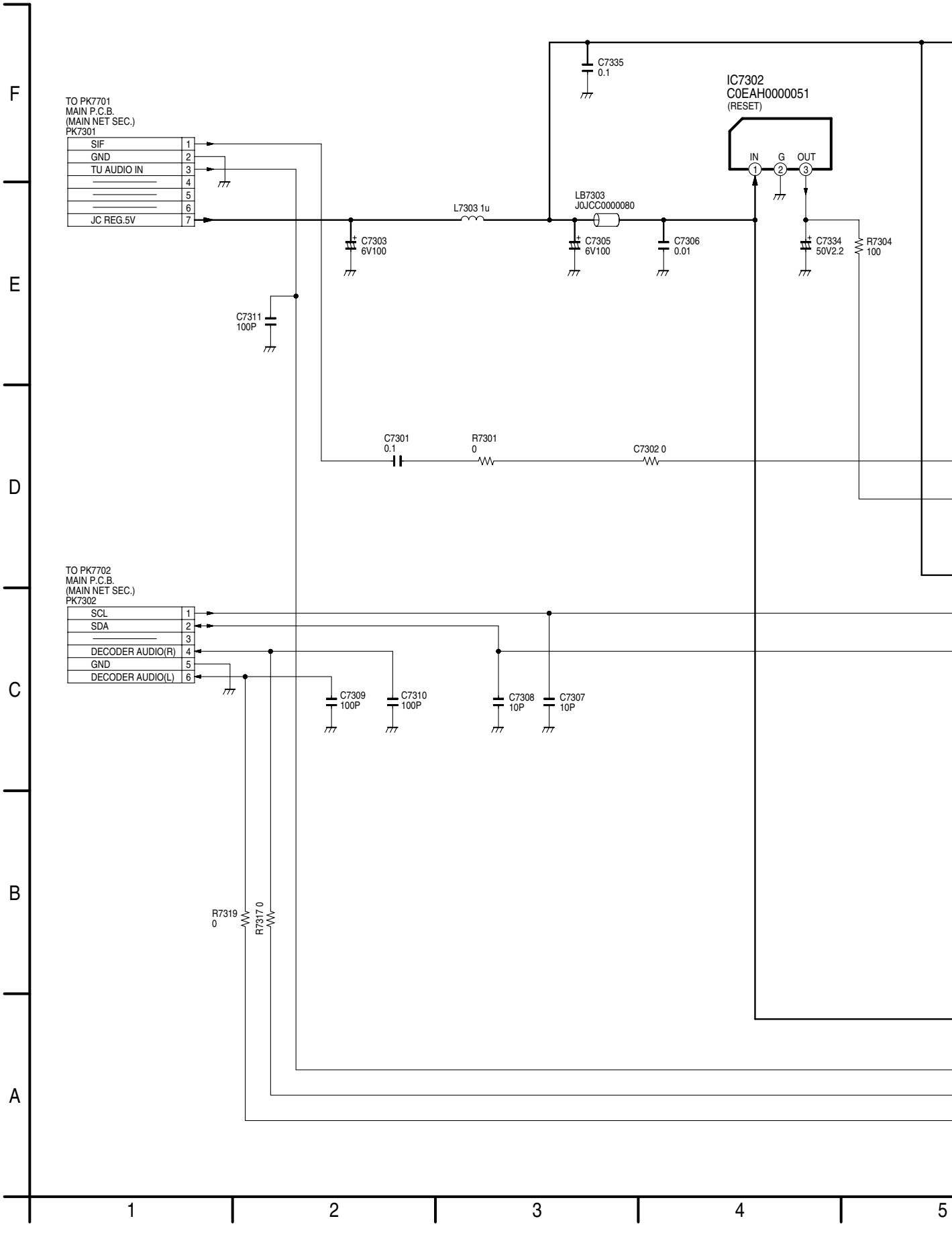
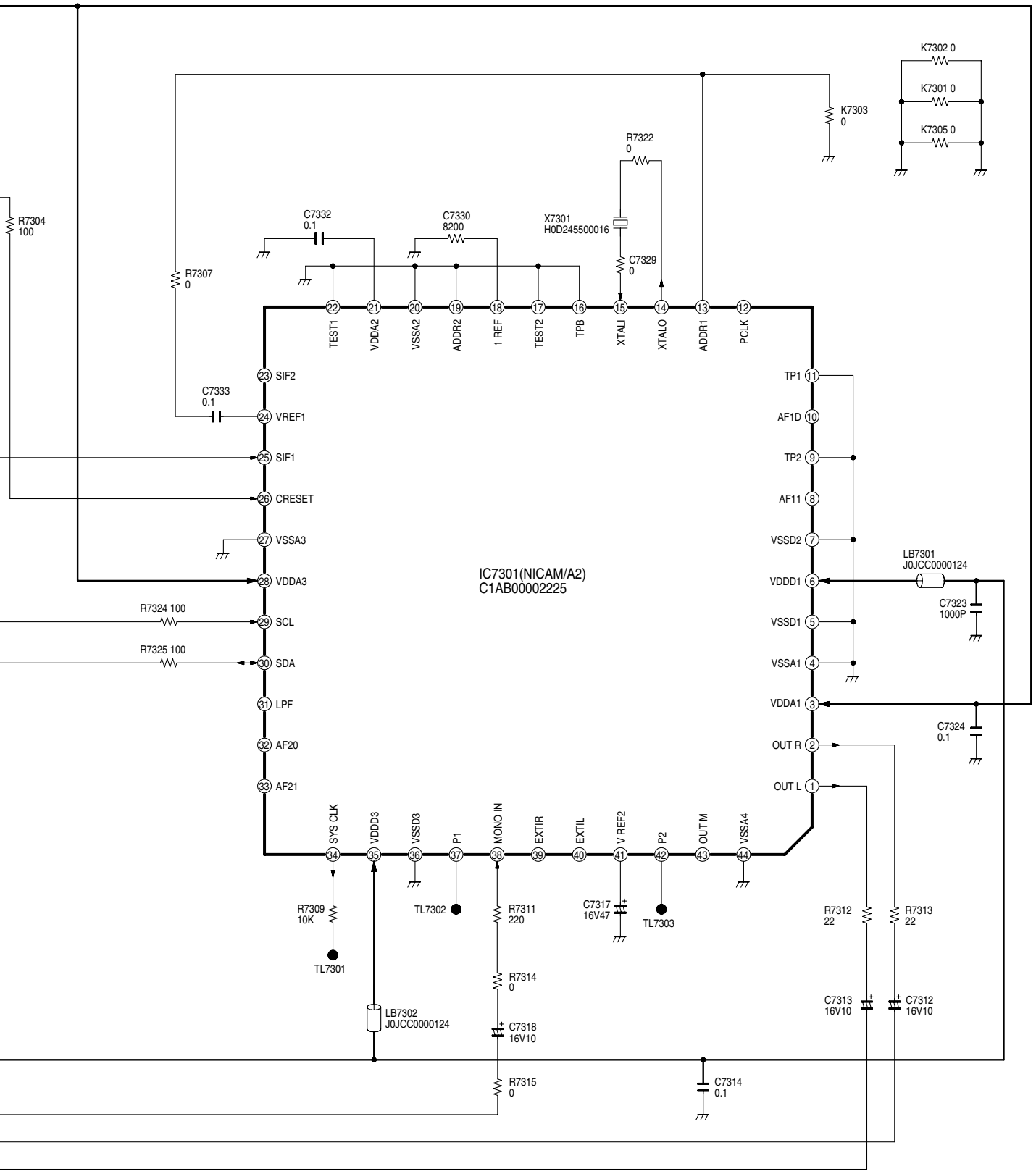
DMR-EH60EG
Tuner Pack
Schematic Diagram

5 | 6 | 7 | 8 | 9

18.7. Nicam Decoder Schematic Diagram



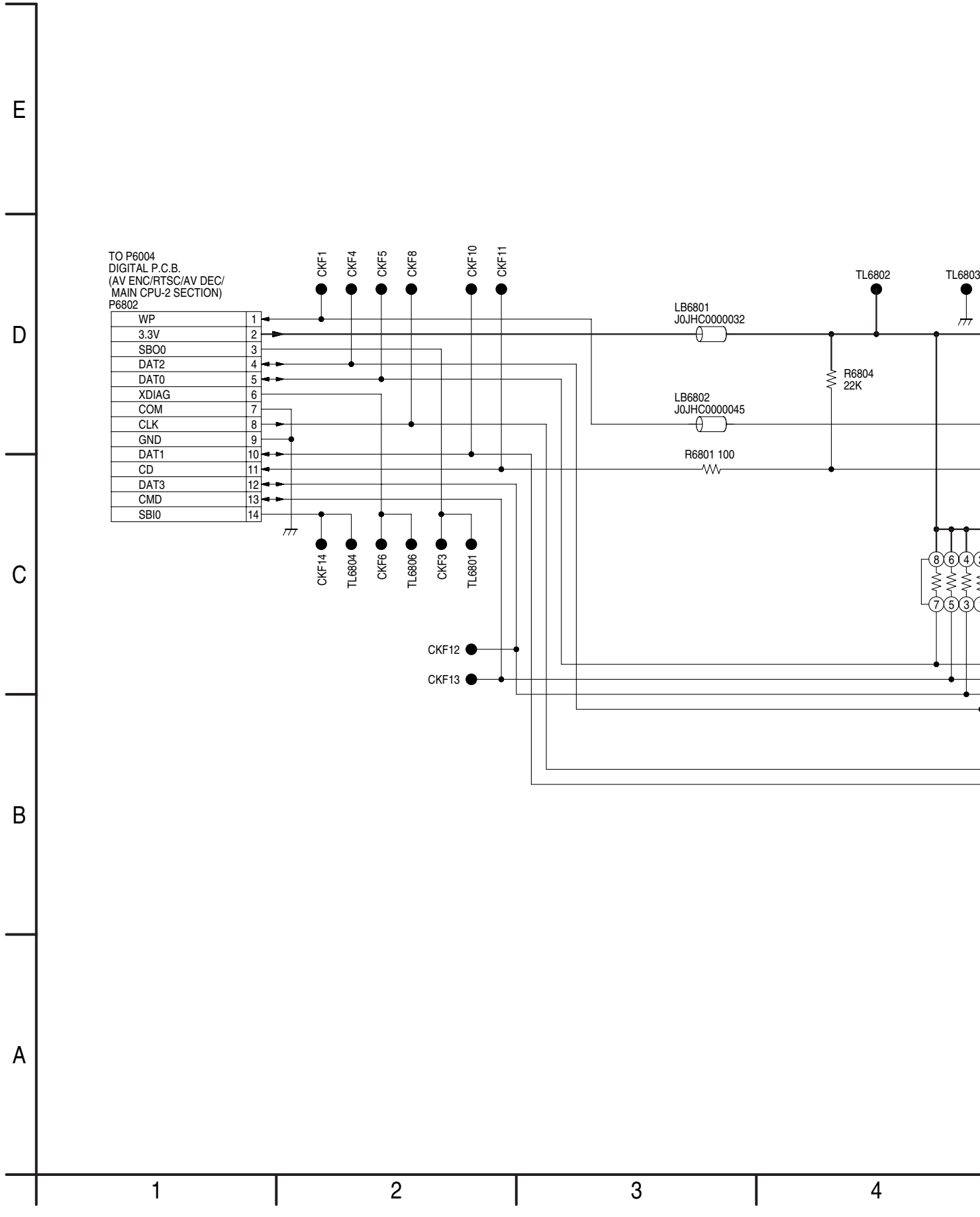


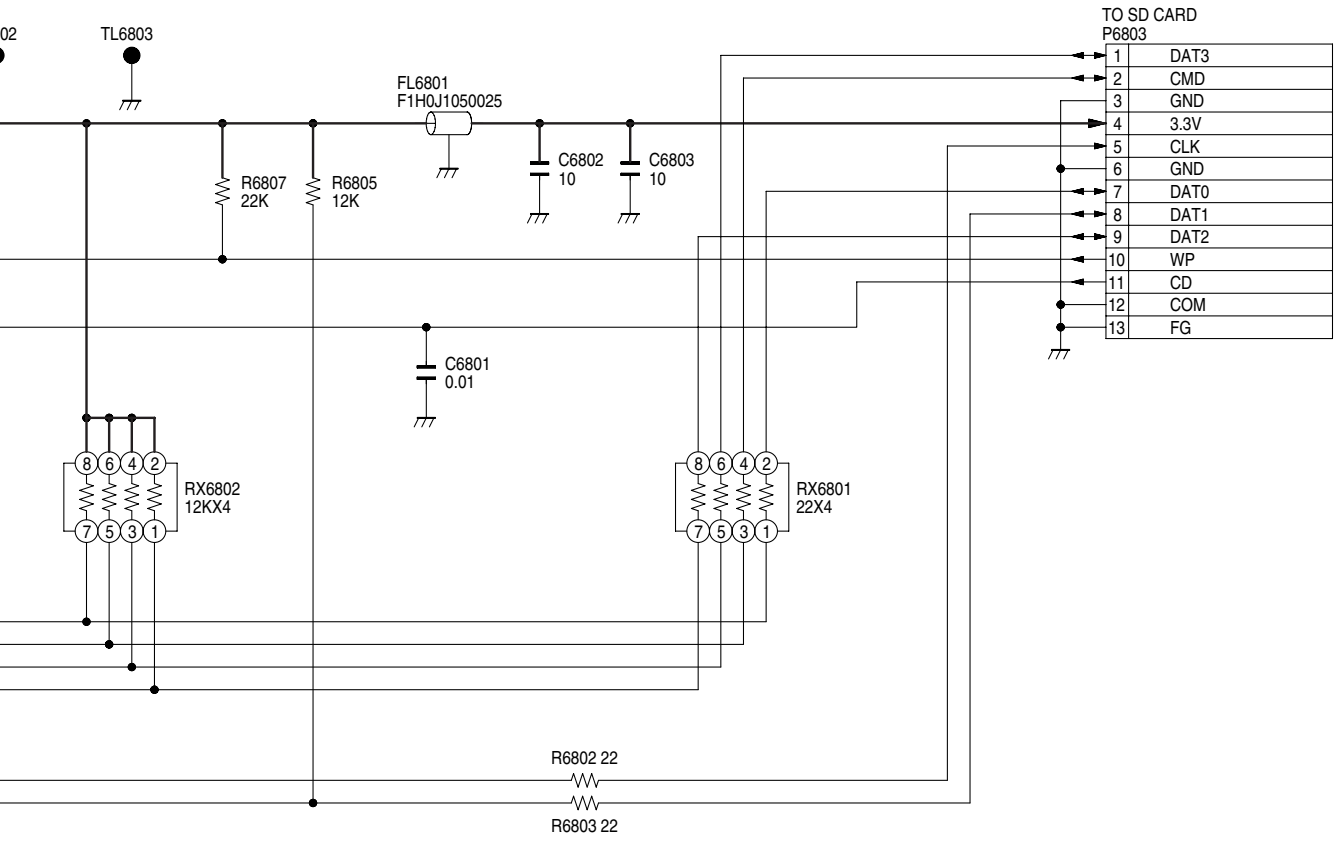
NOTE:
DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM
FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
Nicam Decoder
Schematic Diagram

5 | 6 | 7 | 8

18.8. SD Card Schematic Diagram



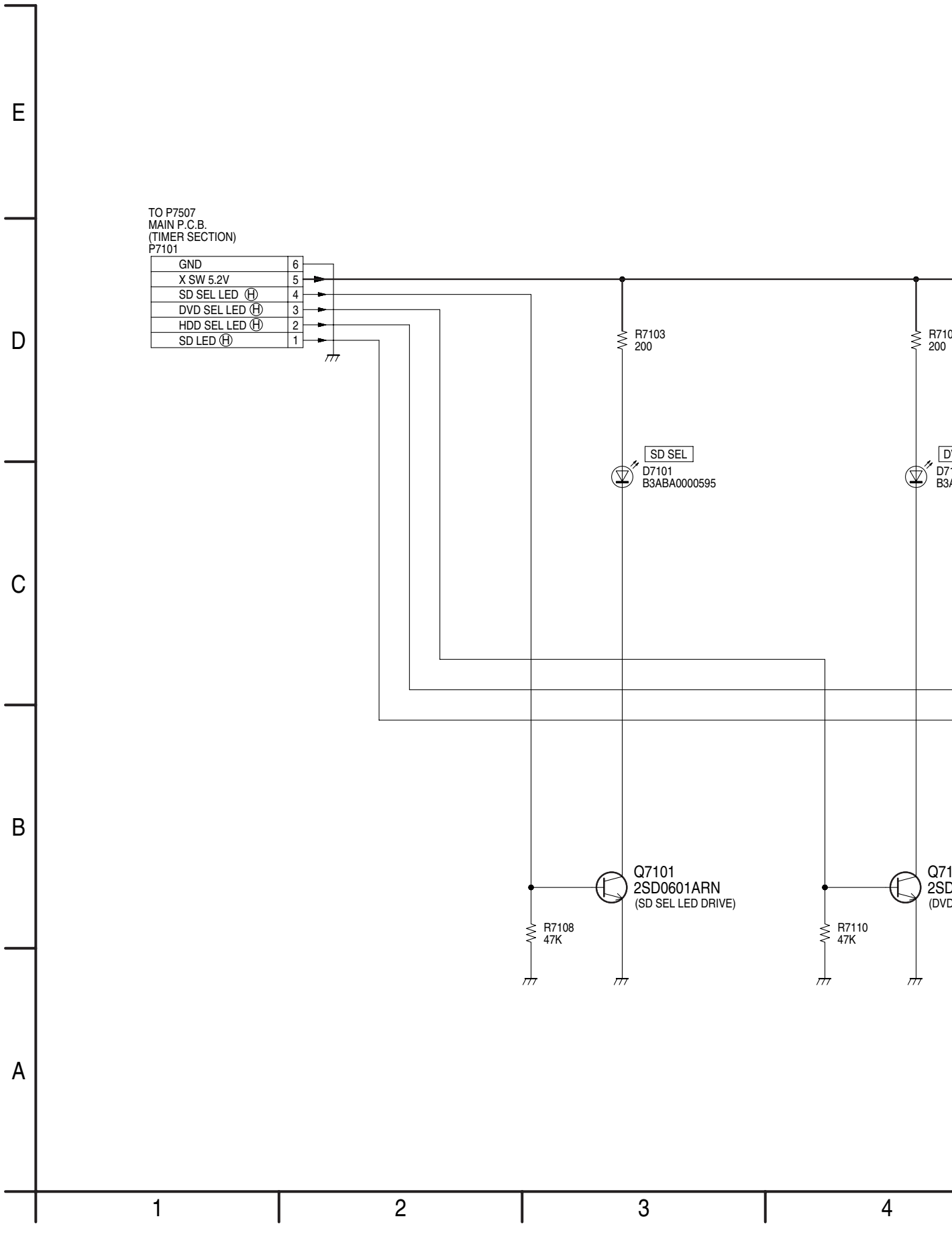


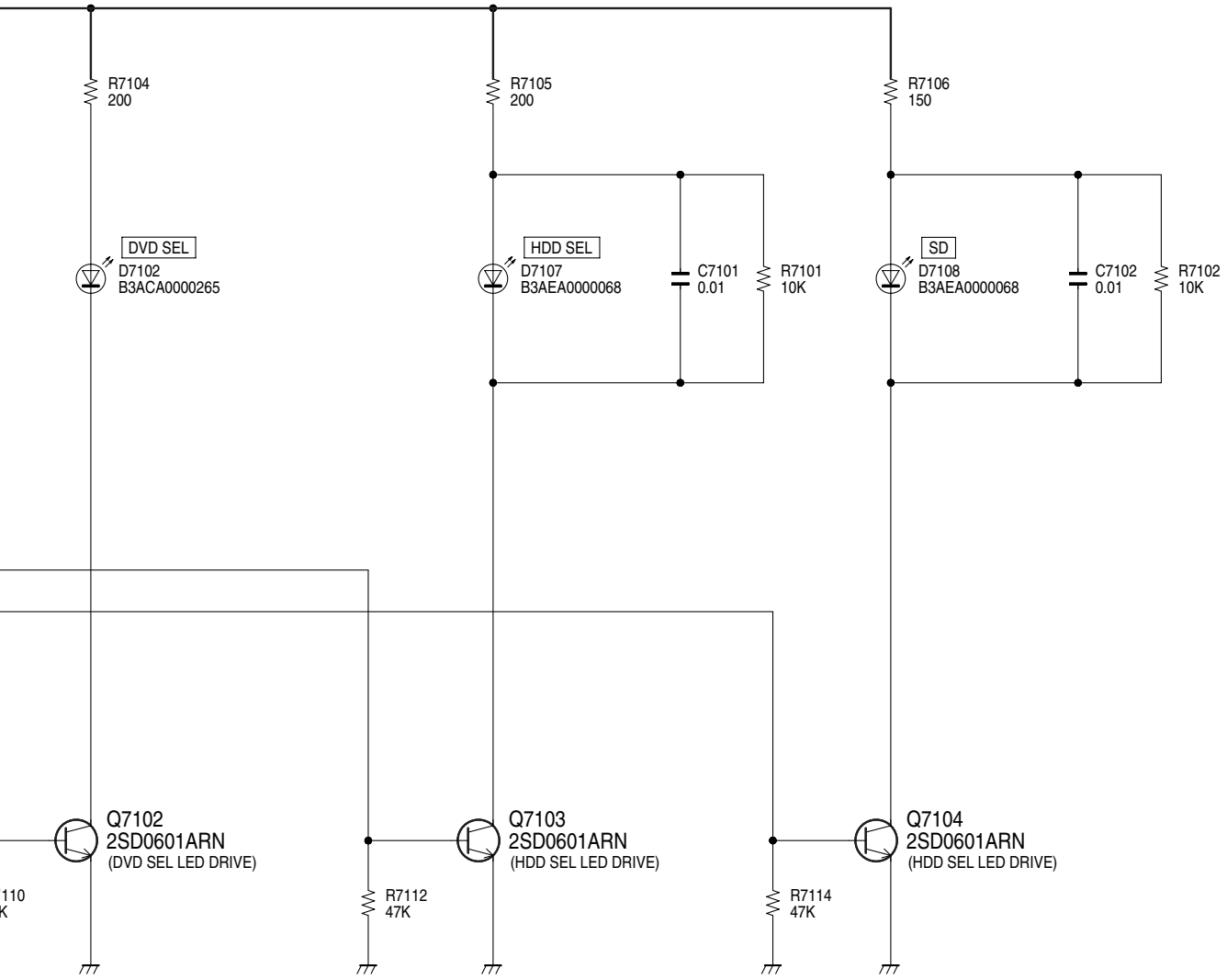
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
SD Card
Schematic Diagram

4 | 5 | 6 | 7

18.9. LED Schematic Diagram





NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60EG
LED Schematic Diagram

4 | 5 | 6 | 7

Ref No. / MODE	Q7101				Q7102				Q7103				Q7104							
	E	C	B		E	C	B		E	C	B		E	C	B					
REC	0	3.7	0		0	0.1	0.7		0	5.2	0		0	0	0.7					
PLAY	0	3.7	0		0	0.1	0.7		0	5.2	0		0	0	0.7					
STOP	0	3.7	0		0	0.1	0.7		0	5.2	0		0	0	0.7					

Ref No.	IC1501									IC1502										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	5.0	0	0	3.4	4.9	0	0	5.6		3.3	0	0	2.0	4.9	0	0	3.6			
PLAY	5.0	0	0	3.4	4.9	0	0	5.6		3.3	0	0	2.0	4.9	0	0	3.6			
STOP	5.0	0	0	3.4	4.9	0	0	5.6		3.3	0	0	2.0	4.9	0	0	3.7			
Ref No.	IC1504						IC1505													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	3.6	3.2	3.3	2.6	0		3.3	0	0	1.9	4.1	0	4.6	3.6						
PLAY	3.6	3.2	3.3	2.6	0		3.3	0	0	1.9	4.1	0	4.6	3.6						
STOP	3.7	3.2	3.3	2.6	0		3.3	0	0	2.0	4.1	0	4.6	3.6						
Ref No.	IC1510						IC1511													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
PLAY	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
STOP	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	0.3	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
PLAY	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	0.3	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
STOP	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	1.6	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	1.7	1.7	1.7	5.0	1.4	0.1	1.4	0	2.1	1.6	0	1.6	0	0	0.3	1.6	0	1.6	5.0
PLAY	0	1.7	1.7	1.7	5.0	1.4	0.1	1.4	0	2.1	1.6	0	1.6	0	0	0.3	1.6	0	1.6	5.0
STOP	0	1.7	1.6	1.7	5.0	1.4	0.2	1.4	0	2.1	1.6	0	1.6	0	2.1	0.3	1.6	0	1.6	5.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.4	4.4	4.0	4.5	4.5	4.5	4.5	9.1	4.4	4.4	4.5
PLAY	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.4	4.4	4.0	4.5	4.5	4.5	4.5	9.1	4.4	4.4	4.5
STOP	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.5	4.0	4.5	4.5	4.4	3.8	3.9	9.1	4.0	4.3	3.7
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	4.5	4.5	4.5	4.5	9.0	0	0.9	0.9	1.4	1.4	4.5	4.5	4.5	4.5	0	4.5	9.5	4.5	4.5	0
PLAY	4.5	4.5	4.5	4.5	9.0	0	0.9	0.9	1.4	1.4	4.5	4.5	4.5	4.5	0	4.5	9.5	4.5	4.5	0
STOP	3.7	3.7	3.7	3.8	9.0	0	1.2	0.4	0.4	0.4	4.5	4.5	4.5	4.5	0.4	0.4	0.3	4.5	4.5	0

Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	2.1	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.0	2.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5
PLAY	2.1	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.0	2.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5
STOP	4.7	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.1	5.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5

Ref No.	IC4009								IC4011											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5						
REC	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						
PLAY	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						
STOP	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						

Ref No.	IC4012								IC7401											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5						
REC	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						
PLAY	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						
STOP	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						

Ref No.	IC7402							IC7403												
MODE	1	2	3	4	5	6		1	2	3	4	5	6	7	8					
REC	5.6	0	5.6	1.8	0	5.1		5.0	0	0	2.7	4.1	0.3	0.4	5.6					
PLAY	5.6	0	5.6	1.8	0	5.1		5.0	0	0	2.7	4.1	0.3	0.4	5.6					
STOP	5.6	0	5.6	1.3	0	5.1		5.0	0	0	3.4	4.2	3.8	0	5.6					

Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0.3	4.9	3.8	0.8	0.8	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1
PLAY	0.3	4.9	3.8	0.8	0.8	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1
STOP	0.6	4.9	4.5	0.9	0.9	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1

Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	0	1.3	3.3	0	0	0	0	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3
PLAY	0	0	1.3	3.3	0	0	0	0	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3
STOP	0	0	1.3	3.3	0	0	0	4.8	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3

Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	3.3	3.2	3.3	0	0	5.0	0	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9
PLAY	0	3.3	3.2	3.3	0	0	5.0	0	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9
STOP	0	3.3	3.2	3.3	0	0	5.0	4.9	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9

Ref No.	IC7501																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1
PLAY	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1
STOP	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1

Ref No.	IC7501																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	5.0	4.9	0.6	2.3	4.7	3.2
PLAY	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	5.0	4.9	0.6	2.3	4.7	3.2
STOP	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	4.9	2.5	2.1	0.3	4.7	0

Ref No.	IC7501																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116				
REC	4.9	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	0.5				
PLAY	4.9	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	0.5				
STOP	5.0	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	1.0				

Ref No.	IC7502						IC7503													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	0	0	0	5.0	5.0		0	0	0	0	4.6	4.8	4.9	5.0						
PLAY	0	0	0	5.0	5.0		0	0	0	0	4.6	4.8	4.9	5.0						
STOP	0	0	0	5.0	5.0		0	0	0	0	4.6	4.7	4.9	5.0						

Ref No.	IC7504																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.9	0	4.4	2.5	0	2.2	2.2	5.0	-27.8	-25.8	-25.7	-26.5	-25.6	-25.1	-24.7	-27.8	-24.7	5.0	-24.7	-21.6
PLAY	4.9	0	4.4	2.5	0	2.2	2.2	5.0	-27.8	-25.8	-25.7	-26.5	-25.6	-25.1	-24.7	-27.8	-24.7	5.0	-24.7	-21.6
STOP	4.9	0	4.4	0.8	0	2.2	2.2	5.0	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-18.0	5.0	-15.5	-18.0

Ref No.	IC7504																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-18.5	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-21.5	-21.5	-18.4	-21.6	-21.6	-13.3	-15.6	-9.8	-18.5	-21.6	-18.5	-11.7	-21.3
PLAY	-18.5	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-21.5	-21.5	-18.4	-21.6	-21.6	-13.3	-15.6	-9.8	-18.5	-21.6	-18.5	-11.7	-21.3
STOP	-13.0	-18.0	-15.5	-18.2	-18.4	-18.0	-18.1	-18.1	-10.5	-13.4	-18.5	-16.5	-15.1	-16.0	-3.9	-17.8	-10.1	-12.2	-12.2	-14.2

Ref No.	IC7504																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	-21.6	-21.7	-21.9	-22.4	-19.3	-13.6	-16.2	-21.9	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.7	-24.7	-24.7	-24.7	-24.7
PLAY	-21.6	-21.7	-21.9	-22.4	-19.3	-13.6	-16.2	-21.9	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.7	-24.7	-24.7	-24.7	-24.7
STOP	-16.5	-17.2	-17.2	-16.6	-14.2	-14.3	-14.7	-27.8	-27.8	-27.3	-27.8	-27.0	-26.5	-26.5	-26.5	-25.0	-23.6	-24.5	-23.6	-23.0

Ref No.	IC7504																			
MODE	61	62	63	64																
REC	-24.7	-24.7	-24.7	-28.0																
PLAY	-24.7	-24.7	-24.7	-28.0																
STOP	-22.5	-22.5	-22.4	-28.0																

Ref No.	IC7505						IC7506						IC7507							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.2	0.3	11.2	12.3
PLAY	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.2	0.3	11.2	12.3
STOP	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.3	0.2	11.2	12.3

Ref No.	Q3907			Q3908			Q3909			Q3910			Q4004		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	4.6	4.6	5.0	4.6	4.6	5.0	4.6	0.3	0	0.3	4.3	0.1	5.2	-0.9	5.2
PLAY	4.6	4.6	5.0	4.6	4.6	5.0	4.6	0.3	0	0.3	4.3	0.1	5.2	-0.9	5.2
STOP	4.4	4.4	4.7	4.6	4.6	5.0	4.6	0.3	0	0.1	4.6	0.1	5.2	-0.4	5.2
Ref No.	Q4006			Q4007			Q4008			Q4009			Q7401		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	0	-0.1	0	0	-0.1	0	0	-0.2	0	0	-0.2	0	11.6	0
PLAY	0	0	-0.1	0	0	-0.1	0	0	-0.2	0	0	-0.2	0	11.6	0
STOP	0	0	-0.1	0	0	-0.1	0	0	0.4	0	0	0	0.1	11.6	0
Ref No.	Q7501			Q7502			Q7503			Q7504			Q7506		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6	0	5.0	0
PLAY	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6	0	5.0	0
STOP	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6	0	5.0	0
Ref No.	Q7507			Q7508			Q7510			Q7511					
MODE	E	C	B	E	C	B	E	C	B	E	C	B			
REC	0	0	4.6	0	4.6	0	0	29.3	0	5.1	12.3	5.5			
PLAY	0	0	4.6	0	4.6	0	0	29.3	0	5.1	12.3	5.5			
STOP	0	0	5.1	0	5.1	0.1	0	29.1	0	5.1	12.3	5.6			
Ref No.	QR3914			QR4002			QR4003			QR4004			QR4005		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
PLAY	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
STOP	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
Ref No.	QR7401			QR7403			QR7404			QR7501			QR7503		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	4.2	0	0	0	4.9	0	0	0	0	4.5	0.3	0	3.3	0
PLAY	0	4.2	0	0	0	4.9	0	0	0	0	4.5	0.3	0	3.3	0
STOP	0	4.2	0	0	0	4.9	0	0	0	0	4.4	0.3	0	3.3	0
Ref No.	QR7506			QR7507			QR7508								
MODE	E	C	B	E	C	B	E	C	B						
REC	0	0	2.2	0	0	4.1	0	0.1	0						
PLAY	0	0	2.2	0	0	4.1	0	0.1	0						
STOP	0	0	2.2	0	0	4.1	0	0.1	0						

Ref No.	IC7301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	2.5	2.5	5.0	0	0	4.9	0	0	0	0.2	0	0.1	0	1.6	1.5	0	0	2.0	0	0
PLAY	2.5	2.5	5.0	0	0	4.9	0	0	0	0.3	0	0.3	0	1.6	1.5	0	0	2.0	0	0
STOP	2.5	2.5	5.0	0	0	4.9	0	0	0	0.3	0	0.2	0	1.6	1.5	0	0	2.0	0	0

Ref No.	IC7301																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	3.3	0	2.0	2.0	2.0	4.9	0	5.0	4.5	4.2	0.3	0.2	0.2	0.2	5.0	0	4.9	2.5	2.5	2.5
PLAY	3.3	0	2.0	2.0	2.0	4.9	0	5.0	4.5	4.2	0.3	0	0.2	0.2	5.0	0	4.9	2.5	2.5	2.5
STOP	3.3	0	2.0	2.0	2.0	4.9	0	5.0	4.5	4.2	0.3	0.3	0.3	0.2	5.0	0	4.9	2.5	2.5	2.5

Ref No.	IC7301																			
MODE	41	42	43	44																
REC	2.5	4.9	2.5	0																
PLAY	2.5	4.9	2.5	0																
STOP	2.5	4.9	2.5	0																

Ref No.	IC7302																			
MODE	1	2	3																	
REC	5.0	0	4.9																	
PLAY	5.0	0	4.9																	
STOP	5.0	0	4.9																	

Ref No.	P9001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	-	-	1.0	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
PLAY	-	-	-	1.0	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
STOP	-	-	-	1.0	-	3.3	3.3	3.2	0.2	3.1	-	3.2	-	3.3	2.3	-	5.1	-	-	-

Ref No.	P9001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
PLAY	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
STOP	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-

Ref No.	P9001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.7	0	3.7	1.1	5.7
PLAY	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.7	0	3.7	1.1	5.7
STOP	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.7	0	3.7	1.1	5.7

Ref No.	P9001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	5.7	1.0	5.7	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-
PLAY	0	5.7	1.0	5.7	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-
STOP	0	5.7	1.0	5.7	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-

Ref No.	P9001																			
MODE	81	82	83	84	85	86	87	88												
REC	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
PLAY	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
STOP	0	1.5	1.5	1.5	0	1.5	2.1	1.5												

Ref No.	IC1150								
MODE	1	2	3	4	5	6	7	8	9
REC	3.0	1.5	0	11.6	0	-	310	-	-1523
PLAY	3.0	1.5	0	11.6	0	-	310	-	-1523
STOP	3.0	1.5	0	11.6	0	-	310	-	-1538

Ref No.	IC1200		
MODE	1	2	3
REC	8.3	2.5	0
PLAY	8.3	2.5	0
STOP	8.3	2.5	0

Ref No.	IC1400							
MODE	1	2	3	4	5	6	7	8
REC	12.4	0	1.4	4.3	0	0.9	0.8	1.1
PLAY	12.4	0	1.4	4.3	0	0.9	0.8	1.1
STOP	12.4	0	1.4	4.3	0	0.9	0.8	1.1

Ref No.	IC1401				
MODE	1	2	3	4	5
REC	5.6	4.9	5.2	2.7	0
PLAY	5.6	4.9	5.2	2.7	0
STOP	5.6	4.9	5.2	2.7	0

Ref No.	IC1501				
MODE	1	2	3	4	5
REC	0	0	0	5.1	5.1
PLAY	0	0	0	5.1	5.1
STOP	0	0	0	5.1	5.1

Ref No.	IC1601							
MODE	1	2	3	4	5	6	7	8
REC	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3
PLAY	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3
STOP	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3

Ref No.	IC1701							
MODE	1	2	3	4	5	6	7	8
REC	12.4	4.5	1.2	1.3	0	0	8.5	12.4
PLAY	12.4	4.5	1.2	1.3	0	0	8.5	12.4
STOP	12.4	4.5	1.2	1.3	1.2	0	8.5	12.4

Ref No.	Q1200			
MODE	1	2	3	4
REC	9.3	8.3	0	1.5
PLAY	9.3	8.3	0	1.5
STOP	9.3	8.3	0	1.5

Ref No.	Q1270							
MODE	1	2	3	4	5	6	7	8
REC	12.4	12.4	12.4	6.2	12.4	12.4	12.4	12.4
PLAY	12.4	12.4	12.4	6.2	12.4	12.4	12.4	12.4
STOP	12.4	12.4	12.3	6.2	12.4	12.4	12.4	12.4

Ref No.	Q1400					
MODE	1	2	3	4	5	6
REC	6.1	6.1	7.6	12.3	6.2	6.2
PLAY	6.1	6.1	7.6	12.3	6.2	6.2
STOP	5.9	6.2	7.6	12.3	6.3	6.2

Ref No.	Q1600							
MODE	1	2	3	4	5	6	7	8
REC	12.3	12.3	12.3	7.6	5.5	5.4	5.5	5.6
PLAY	12.3	12.3	12.3	7.6	5.5	5.4	5.5	5.6
STOP	12.3	12.3	12.3	7.6	5.6	5.6	5.6	5.6

Ref No.	Q1700					
MODE	1	2	3	4	5	6
REC	3.0	3.0	8.5	12.4	2.9	3.0
PLAY	3.0	3.0	8.5	12.4	2.9	3.0
STOP	3.0	3.1	8.5	12.4	3.0	3.0

Ref No.	QR1301		
MODE	E	C	B
REC	0	0	3.3
PLAY	0	0	3.3
STOP	0	0	3.3

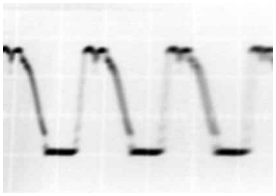
Ref No.	QR1302		
MODE	E	C	B
REC	0	0.1	5.0
PLAY	0	0.1	5.0
STOP	0	0.1	5.0

Ref No.	QR1303		
MODE	E	C	B
REC	0	4.9	0.1
PLAY	0	4.9	0.1
STOP	0	4.9	0.1

Ref No.	QR1304		
MODE	E	C	B
REC	0	0	5.0
PLAY	0	0	5.0
STOP	0	0	5.0

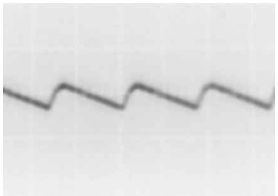
Ref No.	QR1800		
MODE	E	C	B
REC	11.9	0	12.3
PLAY	11.9	0	12.3
STOP	11.9	0	12.3

Ref No.	QR1801		
MODE	E	C	B
REC	0	4.5	0
PLAY	0	4.5	0
STOP	0	4.5	0

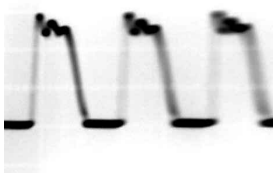


T1150-3 STOP
30Vp-p (5 μ sec.div)

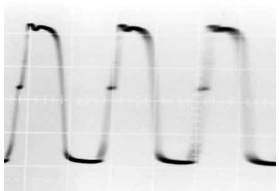
T1150-5 STOP
560Vp-p (5 μ sec.div)



T1150-7 STOP
8Vp-p (5m sec.div)

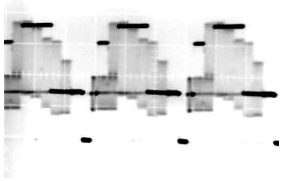


T1150-15,18 STOP
30Vp-p (5 μ sec.div)

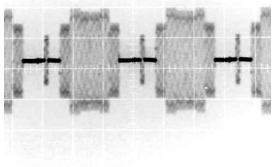


IC1150-1 STOP
8.0Vp-p (5 μ sec.div)

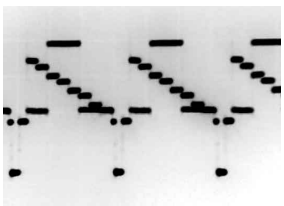
IC1150-2 STOP
0.5Vp-p (5 μ sec.div)



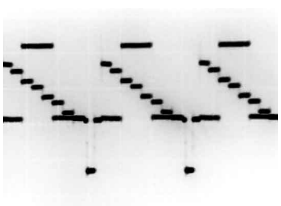
P7402-83 REC/PLAY
1.0Vp-p (20 μ sec.div)



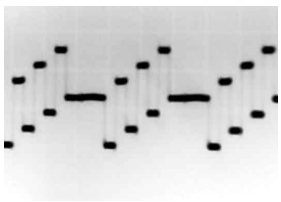
P7402-51 REC/PLAY
0.7Vp-p (20 μ sec.div)



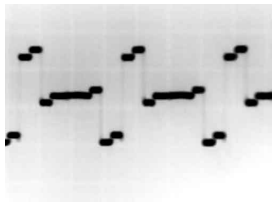
P7402-47 REC/PLAY
1.0Vp-p (20 μ sec.div)



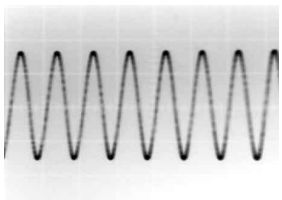
P7402-59 REC/PLAY
1.0Vp-p (20 μ sec.div)



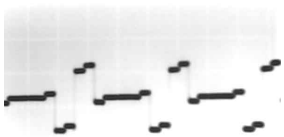
P7402-63 REC/PLAY
0.6Vp-p (20 μ sec.div)



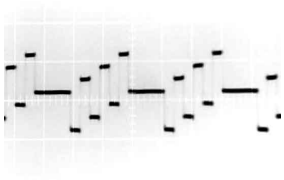
P7402-55 REC/PLAY
0.6Vp-p (20 μ sec.div)



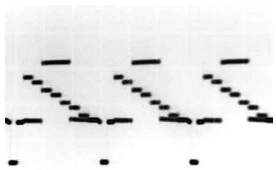
P7402-29,31 REC/PLAY
0.8Vp-p (1m sec.div)



JK3903-2 REC/PLAY
1.1Vp-p (20 μ sec.div)



JK3903-3 REC/PLAY
1.1Vp-p (20 μ sec.div)



JK3903-4 REC/PLAY
2.0Vp-p (20 μ sec.div)